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Figure 3-1-Environmental Monitoring Plan; Sheet 1-4 - attachment to Appendix A; Computer Disk - Appendix H

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Rev. 07/10/02

RMT
Integrated Environmental Solutions

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Madison, WI
Telephone: 608-831-4444
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July 14, 2004

Mr. Tom Bloom
Remedial Project Manager
USEPA - Region V
77 West Jackson Boulevard, SR-6
Chicago, IL 60604-3504

Subject: Reduction in Testing Frequencies for HOD Landfill, Antioch, Illinois

Dear Tom:

The purpose of this letter is to inform you of changes to two testing frequencies at the HOD Landfill in Antioch, Illinois. The first is a reduction in the leachate testing at the HOD Landfill in accordance with the provisions in Subsection 3.3.1 of the Performance Standards Verification Plan (PSVP) for HOD Landfill. The PSVP, in accordance with 35 IAC 811.309(g)(1), states that the frequency of leachate testing shall be reduced from quarterly to semiannual while the leachate management system is operating, once eight quarters of samples have been obtained and tested. Operations, Maintenance, and Monitoring (OM&M) Reporting began January 1, 2002. At this time, nine consecutive quarterly samples have been collected and analyzed, meeting the requirements of the PSVP and 35 IAC 811.309(g)(1).

Secondly, please note that the PSVP, in accordance with 35 IAC 811.310(c)(3), allows for the reduction in monitoring of the landfill gas probes at the HOD Landfill (GP3, GP4A, GP5A, GP6, GP7, and GP8) from quarterly to annual after the first 3 months of gas collection system operation. Since the system has been in operation for over 2 years, criteria for this monitoring reduction requirement have been met. However, in consideration of the future site redevelopment, Waste Management of Illinois, Inc. intends to continue with quarterly monitoring of these probes until further notice.

If you have any questions regarding the information contained within this transmittal, please do not hesitate to contact me, at (608) 831-4444, or Larry Buechel at (262) 253-8626, extension 123.

Sincerely,

RMT, Inc.

Mark J. Torresani
Project Manager

cc: Larry Buechel, WMI
Greg Ratliff, Illinois EPA
Om Patel, Roy F. Weston

WASTE MANAGEMENT

WASTE MANAGEMENT
Closed Sites Management Group
N96 W13600 County Line Road
Germantown, Wisconsin 53022
(262) 253-8626
(262) 255-3798 Fax

July 14, 2004

Mr. Tom Bloom
Remedial Project Manager
USEPA, Region 5 (SR-6J)
77 West Jackson Boulevard
Chicago, IL 60604-3504

RE: First Quarter O&M Report Period 2004 (January 1 to March 31, 2004)
HOD Landfill Site, Antioch, Illinois

Dear Tom:

Attached for your review are two copies of the First Quarter Operations and Maintenance (O&M) Report for the HOD Landfill site in Antioch, Illinois. These reports are being submitted as required in Subsection 7.1 of the Performance Standards Verification Plan (PSVP) for HOD Landfill. The purpose of these reports are to document O&M activities performed and to determine if the remedial action is functioning as designed.

As specified in the PSVP, the attached O&M progress reports include the following information:

- Summaries of the sampling activities and analyses performed
- Copies of reports generated during the course of the reporting period, including inspection and maintenance reports and laboratory and monitoring data
- Summaries of the problems encountered and the actions taken to rectify those problems
- Projected work for the next reporting period

In addition, this report details modifications and operational changes to the landfill gas system to accommodate the installation of the Antioch Community High School's Gas-to-Energy system.

Copies of these reports are also being forwarded directly to the Illinois Environmental Protection Agency and Roy F. Weston (USEPA oversight contractor) for their review. If you have any questions or are in need of any additional information, feel free to contact me, at (262) 253-8626, extension 123.

Sincerely,

Waste Management, Inc.

Lawrence J. Buechel/ca

Lawrence J. Buechel, P.E.
Project Manager

Attachment: First Quarter O&M Report

cc: Greg Ratliff, IEPA (1 copy)
Om Patel, Roy F. Weston (1 copy)
Mark Torresani, RMT (1 copy)

744 Heartland Trail (53717-1934)
PO Box 8923 (53708-8923)
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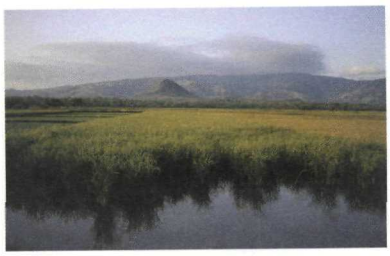


Operations, Maintenance, and Monitoring Progress Report No. 9

First Quarter 2004 O&M Period
January 1, to March 31, 2004

HOD Landfill
Village of Antioch
Lake County, Illinois

July 2004

Prepared For

WASTE MANAGEMENT

Waste Management of Illinois, Inc.

Mark J. Torresani

Mark J. Torresani, P.E.
Project Manager

RMT

Table of Contents

List of Tables

List of Figures

List of Appendices

Section 1
Introduction

1.1 Project Background

The HOD Landfill is located within the eastern boundary of the Village of Antioch in Lake County, in northeastern Illinois. The site consists of approximately 51 acres of landfilled area situated on 121.5 acres of property. Permitted waste disposal activities began at the site in approximately 1963 and continued through approximately 1984. Currently, no active landfilling of waste materials is taking place at the site.

On April 14, 1999, the United States Environmental Protection Agency (USEPA) issued a Unilateral Administrative Order (UAO) that directed the HOD Site Respondents to develop and implement a remedial design and remedial action (RD/RA) plan for remedying the issues identified in the USEPA's Record of Decision (ROD), which was issued on September 28, 1998. The specific project remediation requirements are defined in the Predesign Investigation and RD/RA Workplan (RMT, 1999), and in the Final RD Report (RMT, 2000).

The RD/RA construction activities at the HOD Landfill began on August 21, 2000, and were substantially completed by October 2, 2001. The RA construction included site grading and waste relocation; improvements to the final cover system; installation of a dual leachate/gas extraction system, and a leachate loadout and gas collection system; and site restoration activities (e.g., road construction, and seeding, fertilizing, and mulching). The Interim RA Report (RMT, 2001d) was completed in October 2001.

Initial startup and maintenance of the gas and leachate management system began on April 3, 2001, and continued through December 2001. A report was submitted to the USEPA on April 10, 2002, that summarized the interim operation and monitoring activities for the HOD Landfill gas and leachate collection system (RMT, 2002).

During 2003, a gas-to-energy system was constructed to beneficially use the landfill gas collected at HOD Landfill. This system is owned and operated by the Antioch Community High School. Construction of the gas-to-energy system was substantially completed in September 2003. System startup activities and balancing activities occurred during the third and fourth quarters of 2003, with final troubleshooting taking place in the first portion of 2004. Attached as Appendix A is the Landfill Gas System Modification Report, which contains

information on how the existing landfill gas control system and appurtenances were modified to accommodate the landfill gas-to-energy system.

1.2 Purpose and Scope

The RA also includes operation and maintenance (O&M) activities, such as site inspections of the final cover systems and site monitoring networks; general maintenance; and landfill gas, leachate, groundwater, and surface water monitoring. Specific O&M requirements for the site are identified in the Final O&M Plan (RMT, 2001c), the Quality Assurance Project Plan (QAPP) (RMT, 2001b), the Field Sampling and Analysis Plan (FSAP) (RMT, 2001a), and the Performance Standard Verification Plan (PSVP) (RMT, 2001e). The purpose of this report is to provide documentation of the O&M activities performed during the seventh reporting period following completion of the interim operation period. This report covers the reporting period from January 1, through March 31, 2004.

The scope of this report addresses the following:

- Inspection and maintenance activities
- Environmental monitoring
- Data quality evaluation
- Future activities

Section 2
Site Inspections and Maintenance Activities

2.1 Site Inspections

During the first quarter 2004 O&M period, inspection and maintenance checks occurred at the HOD Landfill on January 14, February 2, and March 16-18. The monthly inspection events included an evaluation of the final cover system, the landfill gas perimeter probes, the dual leachate/gas extraction wells, the condensate sumps, the extraction system piping, the blower flare system, the groundwater monitoring wells, the fencing, the signs, and the access roads for the facility. Based on the findings of the site inspections, maintenance activities were scheduled either on a routine basis or as needed to keep the on-site systems operating correctly. The facility inspection reports are included in Appendix B.

The probes, wells, and piping systems were in good operating condition during the quarter. No indications of burrowing or leachate seeps were discovered on the landfill cover areas. Additionally, there was no evidence of damage to the site fencing, signs, or access roads.

Site maintenance issues identified during the first quarter 2004 inspection events included the following:

MAINTENANCE ISSUE IDENTIFIED	REPAIR OR REMEDY
Some settlement around vault boxes on the eastern portion of the landfill – GW-21, GWF-5, and GW-20	Repairs to be completed in the spring/summer of 2004 during construction activities; repairs likely to consist of vault box extensions
Abus locks needed for GP-3, GP-4A, and GP-5A	New locks placed on these gas probes in March
Flare igniter not working	Flare igniter taken out, new igniter to be ordered, and new igniter to be installed in February
GW-29 cycle counter broken off	QED sending a replacement, to be installed next inspection period

MAINTENANCE ISSUE IDENTIFIED	REPAIR OR REMEDY
GWF-10 drain valve broken off; needs replacement	New valve to be installed when part is received
Flex hose pulled off of GWF-5	Hose placed back on vertical lateral
Several pumps in gas extraction wells not operating as a result of pump exhaust lines filling with water	Well vaults drained and exhaust lines cleared of water; pumps operating again.
New length of flex hose needed at GWF-5, GWF-8, and MHE	Flex hose extended at GWF-5, GWF-8, and MHE
Quick-connect sample ports broken, plugged, or missing at a number of gas extraction wells	Replaced quick-connect ports on wells GWF-4, GW-17, GW-19, GW-20, GW-21, GW-22, GW-25, GW-32, LP2, and LP11

Other maintenance conducted in the first quarter 2004 included the following:

- Surface water was drained from vault boxes.
- The gas sensor in the gas conditioning building was recalibrated.
- QED was on-site to service wells, which included replacing the airline at GWF-4, replacing the pump at GW-24, replacing the air/leachate lines and regulator at GW-29, and cleaning/adjusting the pump at GW-18.

Actions taken to address these site maintenance issues are discussed in the Inspection and Maintenance Reports included in Appendix B.

2.2 Monthly Evaluation

The site maintenance issues identified during the first quarter 2004 inspection period are consistent with those identified in the past, and those expected to arise when designing the system. For example, minor settling will continue to occur, affecting the flexible hose lengths on the wells, and the vaults around each of the gas extraction wells. Regular maintenance on the blower, pumps, and the flare were conducted this quarter, and these ongoing activities will continue to take place to effectively operate the gas collection and leachate extraction systems.

Section 3
Operation and Maintenance Environmental Monitoring

During the first quarter 2004 O&M period at the HOD Landfill, landfill gas, leachate, groundwater, and surface water were monitored. Monitoring of the system was conducted remotely and on-site. During each on-site monitoring period, the barometric pressure, weather conditions, and ground conditions were recorded. In general, the monitoring results indicate that the remedial system is operating with an average gas flow rate ranging from approximately 270 to 310 standard cubic feet per minute (scfm) when both the flare and gas-to-energy systems are both operational, and with a daily average leachate extraction rate ranging from approximately 2,600 to 6,000 gallons. The leachate extraction rate increased significantly toward the end of this quarterly period as the spring thaw resulted in additional liquids being pumped out. The precipitation and liquids were resulting uncharacteristically high during this period. In addition, this liquid saturated the intervals intersected by a number of the gas extraction well screens, limiting typical landfill gas extraction from the well field. The O&M environmental monitoring activities conducted are described in the paragraphs that follow below.

3.1 Landfill Gas System Monitoring

Landfill gas monitoring events were conducted on March 17 and 18, 2004, for the dual extraction system. Gas concentrations, including methane (CH_4), carbon dioxide (CO_2), and oxygen (O_2), were monitored at the header pipe to the flare, and at the 35 dual extraction wells with a Landtec® Gem 500/GA-90. Balance gas (nitrogen) was calculated as the net remaining volume fraction after the other measured constituents (CH_4, CO_2, and O_2) were accounted for. The wells and header pipe were also monitored for temperature, pressure (vacuum), and flow rate. Valve settings were recorded and adjusted, as necessary, to achieve a proper vacuum in the system. Monitoring of the gas probes was also performed during the first quarter monitoring period.

The results of the landfill gas system monitoring between October 1, 2002, and March 18, 2004, are provided in Appendix C. A 15-month period is reported to permit observance of trends over a period longer than this quarterly monitoring period. The amount of gas flow to the landfill's flare ranged from approximately 110 to 170 scfm, with a methane concentration ranging from 40 to 61 percent. The quality of the landfill gas varied during this monitoring

period. This was likely a result of increased liquid levels in extraction wells during spring thaw temporarily blinding the well screens, thereby, reducing gas flow. Landfill settlement occasionally caused a flexible hose on the gas wellheads to be pulled off. Such an occurrence results in higher oxygen concentrations. The system was operated at times with a vacuum provided only by the gas-to-energy system, resulting in higher methane concentrations as a result of lower gas flow. Operating without the blower and flare for a period of time was required during the reporting period because of a broken sparking unit in the flare. During that time, the Antioch High School gas-to-energy system provided a vacuum on the gas collection system and had flow rates between 145 and 163 scfm. Normal operating conditions include both the blower and flare operating in conjunction with the gas-to-energy system. With the addition of the gas-to-energy system, flare temperatures can be moderated to a certain degree with the existing manual louver, to optimize flare combustion. Combustion temperatures remain above 1,000°F during operation of the gas-to-energy system.

Startup and troubleshooting activities for the HOD Landfill/Antioch Community High School gas-to-energy energy system began in late 2003 and continued into the first quarter 2004. Activities included rebalancing the 35 gas extraction wells and blower inlet valves to maintain efficient gas collection. Most of the startup and troubleshooting activities for the gas-to-energy system are expected to be completed in the second quarter of 2004.

3.2 Leachate Collection System Monitoring

The leachate surface elevations and pump cycle counter numbers were recorded for each of the 35 dual extraction wells and four condensate pumps during the first quarter 2004 O&M period. Flow measurements were calculated for the extraction wells and condensate sumps by recording the pump cycle counter numbers on March 16 to 18, 2004. As determined during the interim O&M period, one cycle of each pump was approximately equal to 0.115 gallon (0.435 liter/cycle) (RMT, 2002). However, this rate is somewhat variable because of the changing conditions of the individual pumps and the wells; therefore, it will not correlate exactly with the volume of leachate hauled off-site. However, the cycle counters at each well will give an indication as to where relative volumes of leachate are being collected from. The quarter's liquid level measurements were taken at the individual extraction well locations on March 18, 2004, as described in the O&M Plan (RMT, 2001b). The leachate levels can be found in Table 3-1 and on figures included in Appendix D. The liquid level within the leachate holding tank was monitored on a continuous basis by a pressure transducer within the tank during the first quarter 2004 O&M period. PATS Service, Inc. (PATS), of New Munster, Wisconsin, hauled the accumulated leachate off-site to the City of Burlington, Wisconsin, Wastewater Treatment Plant.

Table 3-1
HOD Landfill Leachate Levels – Q1 2004
HOD Landfill
Antioch, Illinois

WELL	TOP OF FLANGE ELEVATION	DEPTH TO LEACHATE (3/18/04)	LEACHATE ELEVATION[1]
GW 15	780.04	13.23	766.81
GW 16	782.33	20.87	761.46
GW 17	782.68	23.07	759.61
GW 18	792.60	27.76	764.84
GW 19	791.46	29.56	761.90
GW 20	788.76	21.25	767.51
GW 21	788.94	6.81	782.13
GW 22	785.01	17.14	767.87
GW 23	785.14	24.07	761.07
GW 24	788.36	16.86	771.50
GW 25	785.36	21.73	763.63
GW 26	780.00	19.73	760.27
GW 27	776.93	12.10	764.83
GW 28	779.36	14.12	765.24
GW 29	784.57	12.39	772.18
GW 30	778.14	13.17	764.97
GW 31	792.41	29.28	763.13
GW 32	788.33	24.45	763.88
GW 33	782.13	27.89	754.24
GW 34	782.83	25.64	757.19
GWF 2	792.55	10.25	782.30
GWF 3	791.87	33.93	757.94
GWF 4	791.50	35.64	755.86
GWF 5	784.42	13.29	771.13

Table 3-1 (continued)
HOD Landfill Leachate Levels – Q1 2004
HOD Landfill
Antioch, Illinois

WELL	TOP OF FLANGE ELEVATION	DEPTH TO LEACHATE (3/18/04)	LEACHATE ELEVATION[1]
GWF 8	791.50	13.75	777.75
GWF 10	791.50	23.26	768.24
LP 1	774.54	13.35	761.19
LP 10	778.57	13.88	764.69
LP 11	786.13	18.91	767.22
LP 2	786.56	26.90	759.66
LP 3	777.91	11.44	766.47
LP 4	786.60	20.22	766.38
LP 8	792.61	13.77	778.84
MHE	790.79	28.26	762.53
MHW	789.80	30.29	759.51

Notes:
NM = not measured.
NA = not applicable.
NR = no recovery.

By: BJP 4/26/04
Checked by: PJT 5/10/04

(1) Leachate elevations were recorded approximately 1 week after the pumping of leachate was stopped.

Approximately 360,000 gallons (4,000 gallons/day) of leachate were hauled from the HOD Landfill during the first quarter 2004 O&M period. Summary graphs of the quarterly leachate monitoring between March 13, 2003, and March 18, 2004, are provided in Appendix D.

A sample was collected from the leachate holding tank on February 23, 2004, for analysis of the quarterly parameter list. A discussion of the data quality of this analysis is contained in Section 4 of this report. A copy of the analytical results is contained in Appendix E. A summary of detected constituents exceeding standards is contained in Appendix F.

3.3 Groundwater Monitoring

The list of groundwater monitoring well locations and analytical parameters required for the quarterly monitoring program is presented on Figure 3-1 of this report (RMT, 2001a). As documented in the FSAP and the PSVP, each location was chosen on the basis of hydrostratigraphy and its up- or downgradient position relative to the site.

3.3.1 Groundwater Sampling

Sixteen samples of groundwater were collected from February 23 to 26, 2004, for analysis of the parameters on the quarterly parameter list, as provided in the FSAP. A data quality evaluation of the results is contained in Section 4 of this report. A copy of the analytical results is contained in Appendix G, and a summary of detected constituents exceeding applicable standards is contained in Appendix F. Appendix H contains a copy of the analytical results in an electronic format.

3.3.2 Groundwater Level Measurements

On February 23, 2004, groundwater levels were measured in the monitoring wells at the HOD Landfill, as summarized in Table 3-2 of this report.

3.4 Surface Water Monitoring

Surface water samples or staff gauge readings were collected to monitor surface water conditions in Sequoit Creek in the vicinity of the HOD Landfill during the first quarter 2004. The locations and elevations of the stream stage measurement points are summarized in Table 3-3.

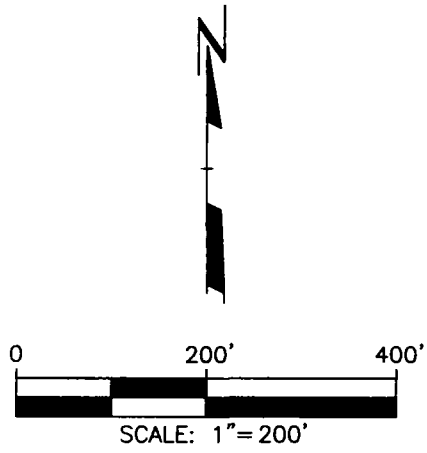
3.5 Electronic Data Transfer

As required in Subsection 7.3 of the PSVP, the groundwater sampling data collected during the first quarter of 2004 have been provided on a diskette (Appendix H). Using this Electronic Data Deliverable (EDD), the chemistry for measurements made in the field and the data from the analysis of the field samples are reported in electronic format.

2. WELLS SHOWN WITHIN THE LIMITS OF WASTE TO BE ABANDONED WILL REMAIN IN PLACE WITH AN AIR TIGHT CAP UNTIL THE GAS COLLECTION SYSTEM IS DEEMED ADEQUATE TO CONTROL AND COLLECT LANDFILL GAS.

2116000N

2115500N



2115000N

2114500N

NO.	BY	DATE	REVISION	APP'D.
3.				
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PROJECT:

H.O.D. LANDFILL - FIELD SAMPLING PLAN
WASTE MANAGEMENT OF ILLINOIS, INC.

SHEET TITLE:

ENVIRONMENTAL MONITORING PLAN

DRAWN BY: REYZEKD	SCALE:	PROJ. NO.	05314.46
CHECKED BY: PJT	1" = 200'	FILE NO.	ENVIRMON.DWG
APPROVED BY: MJT	DATE PRINTED: JUL 06 2004	**FIGURE 3-1**	
DATE: JUNE 2004			

WASTE MANAGEMENT

RMT

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P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

Table 3-2
Groundwater Level Measurements – Q1 2004
HOD Landfill
Antioch, Illinois

GROUNDWATER LEVEL MEASUREMENT POINT	TOP OF WELL ELEVATION (M.S.L. feet)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (M.S.L. feet)	TOTAL WELL DEPTH (feet)	DATE OF GROUNDWATER LEVEL MEASUREMENT
G102	773.53	11.17	762.36	25.10	2/23/04
G14S	770.34	5.94	764.40	10.00	2/23/04
PZ1	788.48	62.80	725.68	118.20	2/23/04
PZ1U	766.41	NA	--	27.00	2/23/04
PZ2U	768.04	NA	--	16.5	2/23/04
PZ3U	766.27	3.60	762.67	39.36	2/23/04
PZ4U	766.49	3.68	762.81	30.00	2/23/04
PZ5U	771.11	8.27	762.84	37.0	2/23/04
PZ6U	766.54	4.03	762.51	42.5	2/23/04
R1D	774.68	49.41	725.27	101.76	2/23/04
US1D	768.88	44.30	724.58	95.60	2/23/04
US1S	768.69	4.36	764.33	12.41	2/23/04
US2D	770.73	42.29	728.44	112.85	2/23/04
US3D	769.72	45.56	724.16	83.15	2/23/04
US3I	769.93	41.32	728.61	58.00	2/23/04
US3S	770.48	8.54	761.94	22.50	2/23/04
US4D	772.70	48.42	724.28	105.60	2/23/04
US4S	773.67	11.33	762.34	25.31	2/23/04
US5D	767.73	43.20	724.53	96.15	2/23/04
US6D	770.09	45.69	724.40	85.24	2/23/04
US6I	770.21	26.04	744.17	62.76	2/23/04
US6S	769.90	7.40	762.50	43.00	2/23/04
W2D	773.04	48.21	724.83	88.33	2/23/04

Table 3-2 (continued)
Groundwater Level Measurements – Q1 2004
HOD Landfill
Antioch, Illinois

GROUNDWATER LEVEL MEASUREMENT POINT	TOP OF WELL ELEVATION (M.S.L. feet)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (M.S.L. feet)	TOTAL WELL DEPTH (feet)	DATE OF GROUNDWATER LEVEL MEASUREMENT
W3D	765.93	41.49	724.44	80.35	2/23/04
W3SA	766.54	4.12	762.42	15.64	2/23/04
W3SB	766.81	4.31	762.50	29.57	2/23/04
W4S	769.97	8.10	761.87	15.00	2/23/04
W5S	773.49	10.97	762.52	14.34	2/23/04
W6S	767.41	4.75	762.66	17.17	2/23/04
W8D	768.14	43.51	724.63	96.15	2/23/04

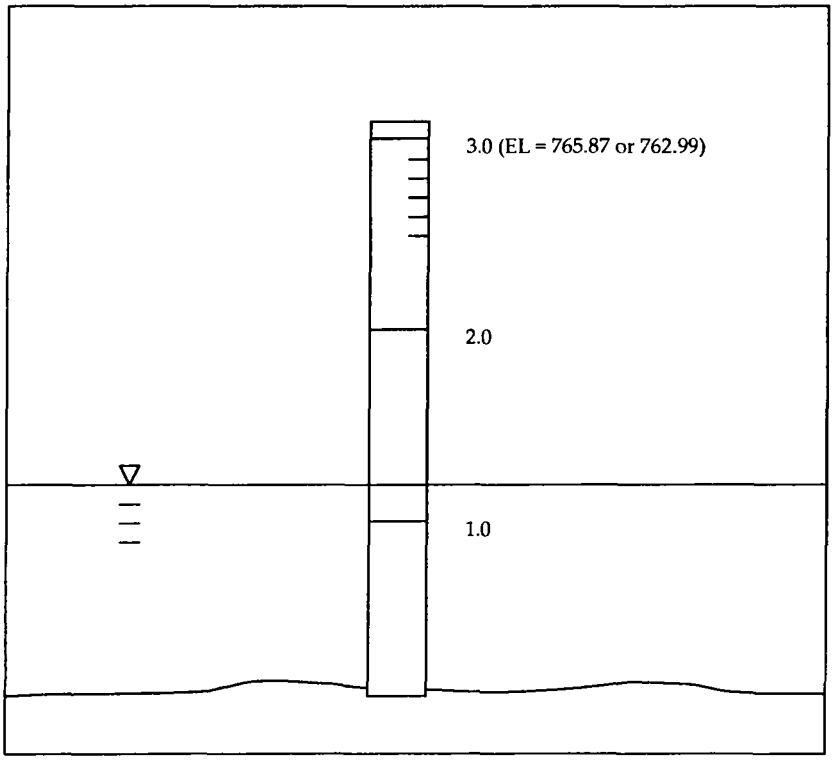
Notes:
NM = not measured.

By: BJP 5/7/04
Checked by: PJT 5/10/04

Table 3-3
Surface Water Level Measurements – Q1 2004
HOD Landfill
Antioch, Illinois

SURFACE WATER LEVEL MEASUREMENT POINT	COORDINATES		3.0-FOOT STAFF GAUGE REFERENCE ELEVATION (M.S.L. feet)	STAFF GAUGE READING (feet)	STREAM STAGE ELEVATION (M.S.L. feet)	DATE OF SURFACE WATER LEVEL MEASUREMENT
	NORTHING	EASTING				
SW-1	2,115,321.23	1,053,327.92	765.87	0.55	763.42	2/23/04
SW-2	2,116,562.10	1,050,723.00	762.99	2.99	762.98	2/23/04

By: BJP 5/7/04
Checked by: PJT 5/10/04



Section 4
Data Quality Evaluation

RMT evaluated the quality of the HOD Landfill groundwater monitoring data from the February 2004 sampling. Data validation was accomplished by comparing the quality assurance and quality control (QA/QC) results contained in the laboratory data packages with the requirements specified in the approved Quality Assurance Project Plan (RMT, 2001b); the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA, 2002); the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (USEPA, 1999); the general guidelines published in SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (USEPA, 1996); EPA 600, Methods for Chemical Analysis of Water and Waste, EPA 600/4-79-020 with revisions (USEPA, 1979); and the Eastern Environmental Radiation Facility Radiochemistry Procedures Manual, EPA 520/5-84-006 (USEPA, 1984), where appropriate. Particular attention was paid to raw data, Chain-of-Custody Records, initial and continuing calibrations, blanks, laboratory control samples (LCSs), spike and duplicate analyses, and ICP serial dilution and ICP interference check sample results. The discussion that follows describes the QA/QC results and evaluation.

All analyses, except for the radioactive parameters were analyzed by Severn Trent Laboratories (STL), Inc., of Amherst, New York. The STL St. Louis laboratory performed the analyses for the radioactive parameters.

4.1 Usability

RMT, Inc., collected a total of 17 water samples (16 groundwater and 1 leachate) in February 2004. The samples were analyzed by STL, Inc., for the analytes listed in the approved Quality Assurance Project Plan (QAPP). The analytes and the analytical methods used for analysis were as follows: volatile organic compounds (VOCs, CLP SOW OLCO2.1); organochlorine pesticides and PCBs (SVOCs, CLP SOW OLCO4.2); chlorophenoxy acid herbicides (Method 8151A, SW-846); semivolatile organic compounds (SW-846, Method 8270); carbamate pesticides (EPA 600-531.7); metals, (Methods 6010 and 6020, SW-846); the radioactive parameters gross alpha and gross beta (Method 900, EPA 520/5-84-006), tritium (Method 906, EPA 520/5-84-006), strontium-90 (Method 905, EPA 520/5-84-006), radium-226 (Method 9315, SW-846), and radium-228 (Method 9320, SW-846); and the inorganic indicator parameters (EPA 600 and Standard Methods). Additionally, trip blanks, matrix spikes/matrix spike duplicates (MSs/MSDs), and one atmospheric blank were collected and analyzed for quality control purposes.

The data quality objectives for the project were met, and the data are usable for the purposes defined in the approved workplan and QAPP. The procedures specified in the methods were implemented, and the data packages were found to contain all of the deliverables specified in the QAPP.

For samples US-04S, G-102, US-04S DUP, and VW-03, the gross alpha and gross beta counting contained a mass residue that was greater than the limit that is required for drinking water (100 mg); but the sample residue was within the laboratory's calibration range. Therefore, the laboratory was not able to achieve the standard laboratory minimum detectable activity.

Four analytes for semivolatile organics have laboratory method detection limits (MDLs) that are greater than the target quantitation limits listed in the QAPP. The compounds are 1,2-dichlorobenzene; 1,4-dichlorobenzene; benzo(a) pyrene; and bis(2-ethylhexyl) phthalate. All MDLs are lower than the groundwater cleanup standards.

Laboratory and data validation qualifiers are defined in Table 4-1.

4.2 Sample Tracking

Laboratory reports received from STL were compared with shipping records to confirm that results were received for each sample that was shipped. All of the results for all sampling locations were received.

4.3 Holding Times and Sample Preservation

Required holding times were met. VOC analyses were performed within 14 days of sample collection. All samples were extracted for SVOCs and pesticide/PCBs within 7 days of sample collection. The extracts were analyzed within 40 days of extraction. Radionuclide analyses were performed within the required 6-month time frame. Mercury analysis for all samples was performed within 28 days of the sampling date. Other metals were analyzed for within the required 6-month time frame. Cyanide and alkalinity analyses were performed within 14 days of sample collection. BOD was analyzed for within the 48-hour holding time of sample collection for all samples except the leachate sample. The original analysis was performed within the holding time; however, all oxygen was depleted. The sample was re-analyzed after the expiration of the holding time, and the result was qualified "hj." All TDS and sulfide analyses were performed within 7 days. Chloride, nitrogen species, fluoride, phosphate, sulfate, and TOC were analyzed for within 28 days of sample collection.

The volatile organic results for sample US-04S are qualified as estimated, "j," because headspace was present in the sample vial. The results showed good correlation with US-04S DUP, which did not have headspace.

Table 4-1
Index of Laboratory and Data Validation Qualifiers
HOD Landfill
Antioch, Illinois

Laboratory Qualifiers

INORGANIC DATA	
B	Analyte value is below the Quantitation Limit.
D	Analyte value is from a diluted analysis.
H	Analysis was performed past holding time.
J	Reported value is less than the reporting limit.
N	Spiked sample recovery was not within control limits.
U	Analyte was tested for but was not detected; value indicates the detection limit.
ORGANIC DATA	
B	Analyte was present in the method blank.
D	Analyte value is from a diluted analysis.
E	Reported concentration exceeded the calibration range of the instrument.
J	Reported value is less than the reporting limit, but greater than zero.
P	The percent difference between the concentrations detected on each analytical column is greater than 25 percent.
N	Spiked sample recovery was not within control limits.
U	The compound was analyzed for, but not detected; the value indicates the detection limit.

Data Validation Qualifiers

j	When specific QC criteria are outside the established control limits, the reported concentration or the Quantitation Limit is approximate.
u	Analyte was present at less than 10 times the concentration in the associated method (B), trip (b), field (f), and/or laboratory storage blank for common laboratory contaminants, or at less than 5 times the blank concentration of other analytes, and is therefore qualified as nondetectable (u) according to USEPA data validation procedures (USEPA, 2002 and 1999).
uj	The material was analyzed for, but not detected. The associated numerical value is an estimated quantity.

4.4 Instrument Performance Checks

Satisfactory gas chromatograph/mass spectrometer (GC/MS) instrument performance checks ensure adequate mass resolution, compound identification, and, to some degree, sensitivity. The analyses of the instrument performance check solutions were performed at the required frequency. The criteria established for instrument performance checks were met at all times.

4.5 Calibrations

Initial calibration establishes that the instrument is capable of acceptable performance at the beginning of the analytical sequence and that the calibration curve is linear. Continuing calibration verifies the calibration and evaluates daily instrument performance.

4.5.1 GC/MS Calibration

Initial calibrations containing target compounds and system monitoring compounds were performed at the required frequency and concentration levels. Initial calibrations of the GC/MS at five concentrations were performed after instrument performance check criteria were met and prior to the analysis of samples and blanks. Internal standards were added to all calibration standards and samples (including blanks and MS/MSD). The GC/MS calibration was verified every 12 hours with one mid-range standard.

The minimum relative response factor (RRF) criterion was met in the GC/MS analyses. The percent relative standard deviation (%RSD) of the calibration factors in the initial calibrations, and the percent deviation (%D) values for the continuing calibrations were all acceptable.

4.5.2 GC and HPLC Calibration

Calibrations of GCs and high-performance liquid chromatograph (HPLC) instruments were performed according to the requirements in the analytical methods. For the analysis of the organochlorine pesticides/PCBs, the performance evaluation mixture (PEM) was analyzed at the frequency required in the method, and all method criteria were met. The %RSD of the calibration factors in the initial calibrations, and the %D values for the continuing calibrations were all acceptable. In a few cases the %D values were slightly high; however, these analytes were not detected in the samples, so there is no impact on the data.

Good peak resolution was achieved for all analyses; retention time (RT) and calibration factors were available for each peak. The RTs of target analytes and surrogate compounds were within the correct RT windows. Overall, acceptable instrument stability and performance were maintained for all instruments.

4.5.3 Inorganic Calibration

Initial calibrations and continuing calibration verifications, including initial and continuing calibration blanks, were performed at the required frequency and concentration level as specified in the methods. All calibration results were within QC acceptance criteria.

4.5.4 Calibrations of the Gas Proportional Counter and Liquid Scintillation Counter for Radionuclides

STL analyzed gross alpha and gross beta, radium-226/228, and strontium-90 radioactivity using a gas flow proportional counter and the beta activity of tritium by using a liquid scintillation counter following distillation. The laboratory calibrated the instruments using NIST-traceable standards. Americium-241 and thorium-230, tritium, and strontium-yttrium-90 were the isotopes in the calibration standards. The daily calibrations were performed using aqueous standards of Americium 241 and Strontium-90 for alpha and beta activity.

Alpha and beta particle activity was counted at the voltage plateau using gas proportional counting. During the detector efficiency calibration, the sensitivity of beta counting to the alpha activity was determined by alpha and beta cross-talk calibration, for which the effect was appropriately compensated.

The transmission factor calibration was performed for gross alpha and gross beta using standards of thorium-230 (alpha radiation) and strontium-90 (beta radiation), in order to account for the effect of sample solids on the counting efficiency and to correct for the self-absorption of the radioactivity due to solids (*i.e.*, counting efficiency vs. sample mass standard curves). In tritium analysis, a monthly quench curve was prepared to account for the sample solids effects. The counts were corrected for background radiation and counting efficiency.

Gross alpha–containing constituents were separated from the sample matrix by coprecipitating with barium sulfate/ferric hydroxide. The samples were then plated on counting planchettes prior to counting for alpha activity. On the other hand, for gross beta analysis, the water sample was evaporated prior to counting on the gas proportional counter. Tritium was counted in a liquid scintillation cocktail.

Overall, the instrument performance and stability for all radioactive analyses were acceptable.

4.6 Method Blanks

Method blanks were analyzed to assess potential sample contamination resulting from laboratory procedures. A method blank is carried through the same analytical steps (preparation and analysis) as the samples. In cases where there is no preparation step, such as for dissolved metals, the laboratory used the initial calibration blank (reagent water) as the method blank. All method blanks were free of target analytes, except for two semivolatile organics blanks, and one for tritium. The semivolatile blanks contained bis-2-ethylhexyl phthalate (BEHP). Based on the data validation guidelines, the BEHP results for samples with less than 10 times the level of the method blank can be qualified as not detected, "u." The result for BEHP was qualified as not detected in sample US-05D. There was no tritium reported in the samples associated to the contaminated blank.

4.7 Trip Blanks

To assess the potential for sample contamination during sample collection, shipment, and storage, trip blanks were analyzed for TCL VOCs during the quarterly monitoring. No target VOCs were detected in the trip blanks.

4.8 Atmospheric Blank

To check for procedural contamination at the site, which may cause sample contamination, one atmospheric blank was analyzed for VOCs and SVOCs. No target analytes were detected in the atmospheric blank.

4.9 Laboratory Control Samples

Laboratory control samples (LCSs) provide information about laboratory performance during the sample preparation and measurement performance on a clean water matrix. In cases where there is no preparation step, such as for dissolved metals, the laboratory used the initial calibration verification as the LCS. Analyte recoveries in the LCS were acceptable.

4.10 Matrix Spike/Matrix Spike Duplicates

A sample matrix spike consists of investigative sample water that is spiked with a group of target constituents representative of the method analytes and carried through the appropriate steps of the analysis. They provide information about the effects of the sample matrix on the sample preparation and measurement performance. The laboratory performed MSs/MSDs at the proper frequency for the project and the analytical methods. The percent recoveries and relative percent differences (RPDs) for the MSs/MDSs were acceptable for all of the organic analyses. In a couple of instances, control limits were exceeded; however, the majority of these exceedences were not significant. All general chemistry parameters had acceptable results for

the MS/MSD, except for total phenolics in sample US-02D. The total phenolics result was qualified as estimated, "j." Several samples were spiked for MS/MSD purposes for the metals parameters. In a couple of instances for metals parameters, the recovery of an analyte was high, and that analyte was not found in the sample. In these cases, no data were qualified. All other metals analytes had acceptable results for the MSs/MSDs. Matrix spike and laboratory duplicate analyses that were performed for gross alpha, gross beta, and tritium, and a laboratory duplicate analysis that was performed for strontium-90 using samples from the HOD Landfill site, were acceptable.

4.11 Surrogate Spikes

Laboratory performance on individual samples and blanks for the organic analyses was established by spiking all samples and blanks with surrogate compounds and then determining the surrogate spike recoveries. All surrogate recoveries were acceptable.

4.12 Blind Field Duplicate Results

Three blind field duplicate samples were collected: one sample each from wells US-04D and US-04S, and SW-02. With a few exceptions, the precision between the blind field duplicate pairs was acceptable for target analytes that were reported at levels greater than 5 to 10 times the reporting limit. The results for sulfate in SW-02 and US-04D, and trans-1,2-dichloroethene were qualified as estimated, "j," because the RPDs were greater than 30 percent.

Table 4-2 shows the comparison of the reported analytes in the duplicate pairs. Relative percent difference (RPD) values were calculated for only those pairs in which both reported results were above the Limit of Quantitation. Constituents that were less than the Quantitation Limit , or constituents that were validated as nondetected on the basis of blank contamination, are not shown. Greater variability is expected when reported values are near or less than the reporting limit, and these values should not be used to evaluate precision.

Table 4-2
Detected Parameters for the Blind Field Duplicate Pairs
HOD Landfill
Antioch, Illinois

PARAMETER	DL	UNITS	FEBRUARY 23, 2004		RPD
			SW-01	DUP	
Calcium, total	5,000	µg/L	58,200	59,500	2.21
Chloride	5	mg/L	136	136	0
Hardness as $CaCO_3$	5	mg/L	298	306	2.65
Magnesium, total	5,000	µg/L	37,000	38,200	3.19
Manganese, total	5	µg/L	216	217	0.462
Nitrogen, ammonia	0.01	mg/L	0.025	0.022	12.8
Phenolics, total recoverable	0.005	mg/L	<0.005	0.0075	NA
Solids, total dissolved	5	mg/L	470	439	6.82
Sulfate	1	mg/L	21.2 j	55.6 j	89.6
PARAMETER	**DL**	**UNITS**	**FEBRUARY 24, 2004**		**RPD**
			US-04D	**DUP**	
Alkalinity as $CaCO_3$	10	mg/L	210	210	0
Boron, dissolved	100	µg/L	429	417	2.84
Calcium, dissolved	5, 000	µg/L	33,800	32,900	2.7
Chloride, dissolved	1	mg/L	3.2	3.3	3.08
Fluoride, dissolved	0.5	mg/L	0.76	0.75	1.32
Hardness as $CaCO_3$	5	mg/L	171	167	2.37
Magnesium, dissolved	5,000	µg/L	21,100	20,600	2.4
Manganese, dissolved	5	mg/L	7.1	7	1.42
Nitrogen, ammonia	0.01	mg/L	0.67	0.67	0
Nitrogen, total Kjeldahl	0.1	mg/L	0.94	0.62	41
Phosphorus, Ortho	0.02	mg/L	0.3	0.29	3.39
Solids, total dissolved	5	mg/L	296	291	1.7
Sulfate	5	mg/L	73.1 j	50 j	37.5
Sulfate, dissolved	5	mg/L	82.7 j	59 j	33.5
Total organic carbon as NPOC	1	mg/L	3	2.8	6.9
Tritium	96	pci/L	0 j	100 j	--
1,4-dichlorobenzene	0.6	µg/L	0.5	< 0.6	NA
Methane	8	µg/L	7	9.8	--

Table 4-2 (continued)
Detected Parameters for the Blind Field Duplicate Pairs
HOD Landfill
Antioch, Illinois

PARAMETER	DL	UNITS	FEBRUARY 24, 2004		RPD
			US-04S	DUP	
Boron, dissolved	100	µg/L	233	225	3.49
Calcium, dissolved		µg/L	130,000	131,000	0.766
Chloride, dissolved	5	mg/L	198	210	5.88
Hardness as $CaCO^3$	5	mg/L	555	558	0.539
Iron, dissolved	100	µg/L	3,330	3,330	0
Magnesium, dissolved	5,000	µg/L	55,900	56,000	0.179
Manganese, dissolved	5	µg/L	91.9	91.9	0
Phenolics, total recoverable	0.005	mg/L	0.0071	< 0.005	NA
Radium-226, dissolved		pci/L	1	1	0
Radium-228, dissolved		pci/L	0.98	1	2.02
Solids, total dissolved	5	mg/L	740	861	15.1
Sulfate, dissolved	5	mg/L	98.2	90.2	8.49
cis-1,2-Dichloroethene	2	µg/L	47 j	46 D	2.15
trans-1,2-Dichloroethene	2	µg/L	2 j	3	40
Vinyl chloride	4	µg/L	1 j	2	--

Note: DL = Detection Limit
RPD = Relative Percent Difference

By: GJG
Checked by: BJP

Section 5
Summary of Future Activities

Projected work for the next reporting period includes the following items:

- Monthly landfill inspections and monitoring of gas header at the blower flare building will be performed in April, May, and June 2004.
- Gas and leachate monitoring will be performed in June 2004.
- Quarterly leachate, groundwater, and surface water sampling is scheduled for May 2004.
- A site inspection will be performed as part of each monitoring event.
- The second quarterly O&M progress report is scheduled for submittal in August 2004.
- The gas sensors for the Blower Facility will be calibrated as required.
- The flame arrestor will be cleaned.
- Pneumatic valves to assist in operation of the landfill gas system will be installed in April 2004.
- The landfill gas collection system and the gas-to-energy system will be balanced.
- Gas/Leachate wellhead vaults to be raised, as required, to account for settlement on the final end use plan revised grades.

Section 6
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Appendix A
Landfill Gas System Modification Report

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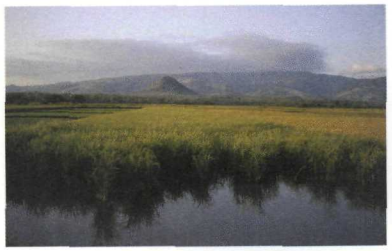


Landfill Gas System Modification Report

Village of Antioch
Lake County, Illinois

July 2004

Prepared For

WASTE MANAGEMENT

Waste Management of Illinois, Inc.

RMT

Table of Contents

List of Figures

List of Appendices

List of Drawings

Section 1
Introduction

1.1 Purpose and Scope

This Gas System Modification Report for HOD Landfill relating to the Antioch High School gas-to-energy project in Antioch, Illinois, has been prepared by RMT, Inc. (RMT), on behalf of the Waste Management, Inc. RMT served as the design-build general contractor on this project. This Report provides details and supporting information for the modifications done to the existing landfill gas collection system at the HOD Landfill as part of the gas-to-energy project. Specifically, this Report includes the following:

- Report text
- Photographs
- Plan sheets

1.2 Project Background

The HOD Landfill (the site) is located within the eastern boundary of the Village of Antioch in Lake County, in northeastern Illinois. The site consists of approximately 51 acres of landfilled area situated on 121.5 acres of property. The construction portion of the Final Remedial Design, including the installation of a landfill gas collection system, and final cover, was approved by the USEPA on August 9, 2000. The gas collection and leachate pumping systems were installed from August 28, 2000, to January 25, 2001. The leachate and gas management system began operating on April 3, 2001, including the monitoring of gas flow rates and characteristics.

In early 2001, the Antioch Community School District, along with others, evaluated the redevelopment potential of the HOD Landfill, including the option of using the landfill gas to generate electricity and heat for the school. This project was approved, and the Antioch Community High School developed a plan to utilize gas from the HOD landfill for a gas-to-energy system. The preliminary design of the gas-to-energy system was completed in the fall of 2002, and the gas-to-energy system was installed from December 26, 2002, to November 2003.

1.2.1 Existing Landfill Gas Management System

The existing landfill gas management system consists of gas collection header pipe, 35 gas extraction wells, four condensate sumps, and a blower/flare system. The volume of landfill gas collected by the system since startup on April 3, 2001, has been relatively

stable at approximately 300 cubic feet per minute at 50 percent methane. This landfill gas contains approximately one-half of the Btu value of natural gas.

1.2.2 Gas-to-Energy System

The landfill gas that is currently being collected and flared is now also used to power 12 microturbines, with excess gas being flared at the landfill. At the landfill gas methane content currently observed at HOD Landfill, each turbine will burn approximately 16 cubic feet per minute (cfm) of landfill gas, for a total of 192 cfm from the 12 units. Figures 1 and 2 show the chiller system and compressor building layout, respectively.

The overall project is made up of the following components:

- **Tie-in to the existing landfill gas control system** – Various portions of the existing gas collection system were tied into to transport gas, air, and condensate between the buildings. Piping was routed under ground between the buildings and are shown on the accompanying plan sheets.
- **Gas conditioning and compression** - The gas that is collected from the landfill is compressed and then conditioned through a series of chillers that drop the gas temperature to around -10° to -20°F to remove unwanted moisture and destructive compounds. An activated carbon unit is also installed on the skid following gas chilling to remove additional impurities.
- **Electric generation** - Each microturbine, fueled by the landfill gas, produces up to 30 kW of three-phase electricity at 480 volts. The 12 microturbines are connected to the school's electrical system in accordance with local utilities' requirements.
- **Heat generation** - Each microturbine produces exhaust energy of around 290,000 Btu/hr at 550°F. The exhaust from the microturbines is routed through a heat recovery system that is tied into the Antioch Community High School's boiler system.

Section 2
Gas-to-Energy System Installation

2.1 Existing Landfill Gas System Modifications

The existing active landfill gas control system at the HOD Landfill was constructed and operated to manage landfill gas generated at the site. The design and construction of the existing landfill gas system is documented in the interim Remedial Action Report (RMT, 2001a).

Gas is collected at 35 wells and routed through a header pipe system, and is discharged into an enclosed ground flare, where it is combusted. The current landfill gas flow rate is approximately 325 cfm with 50 percent methane. This is expected to change over time as a result of the decomposition of the waste and the removal of leachate within the landfill.

The existing blower and controls are located within a building as shown on Plan Sheet 2. A fail-safe valve is provided within the blower building to stop the flow of landfill gas in the event of a flare system shutdown. The blower building and flare are located within an area enclosed by a chain-link fence topped with 3-strand barbed wire. The new gas-conditioning and compression building is also located within this enclosed area.

The gas-to-energy system is designed such that its integration with the existing gas management system does not alter the function of the gas management system at the HOD Landfill. The landfill gas-to-energy system was connected to the existing blower system as shown on Plan Sheets 2 and 3. The existing blower will maintain the required vacuum on the landfill to maintain sufficient landfill gas control. The gas-to-energy system will utilize the required gas flow, which is between 160 and 190 scfm, from the overall site gas flow and route it through the gas-to-energy system. The existing flare will remain operational to burn excess landfill gas that cannot be used by the microturbines. The existing flare will also be used to combust the entire volume of gas collected from the site in the event that the gas-to-energy system goes offline.

A connection to the gas header system was included in the design to bypass the blower and flare, and direct all gas flow to the gas-to-energy system. This condition is anticipated in the future as gas production levels drop off at the landfill and all collected gas can be processed by the gas-to-energy system. The bypass can also be used to route gas past the blower/flare system when repairs to the blower/flare system are being conducted. In April 2004, two pneumatic valves were installed to allow automatic routing around the blower and flare during flare

shutdown. This will allow operation of the gas-to-energy system during downtime of the blower/flare system. The pneumatic valves are tied into the air line of the existing pneumatic shutdown valve in the blower building. When the existing pneumatic blower valve closes, as a result of a flare or blower fault, one new valve (fail open) opens to route around the blower, and one new valve closes (fail close) to prevent air infiltration from the flare. Plan Sheet 3 shows the locations of the valves.

The piping for the gas-to-energy system was tied into the existing system in two places in January 2003 as detailed on Sheet 3 and on Photograph 1 in Appendix A. The purpose of the tie-in was to transfer gas to the new system and provide a bypass around the existing blower. The first tie-in was located on the southern side of the existing blower building, where the landfill gas header pipe from the landfill came into the building. The existing 8-inch–diameter SDR 17 HDPE gas pipe was cut, and an 8-inch–diameter SDR 17 HDPE tee was welded onto the pipe with electro-fusion couplers. The other tie-in was located on the 6-inch–diameter SDR 17 HDPE pipe on the eastern side of the building that went to the flare. The existing pipe was cut, and a 6-inch–diameter SDR 17 HDPE tee was welded onto the pipe with electro-fusion couplers. New 6-inch–diameter SDR 17 HDPE pipe was welded to the tie-in tees, with electro-fusion couplers; and two 6-inch–diameter Schedule 80 PVC Asahi butterfly valves were installed to control the gas flow to the blower. Photograph 2 in Appendix A shows one of the new manual valves installed in the blower building to route around the blower.

The aboveground tie-in piping transitioned to belowground piping on the northeastern corner of the existing blower building. The top of the 6-inch–diameter SDR 17 HDPE pipe going to the landfill gas conditioning building was placed a minimum of 3 feet below ground. This pipe was sloped a minimum of 0.5 percent toward a 10-inch–diameter, 9-foot–long condensate sump, that collects any condensate that drops out of the landfill gas (see Detail 4 on Plan Sheet 3). The liquid that collects in the condensate sump is pumped with a QED AP4DBTS1 stainless-steel pneumatic pump into 2-inch–diameter piping, which routes collected condensate to the existing leachate collection tank. The condensate sump is located just south of the existing 30,000-gallon leachate tank.

During construction of the condensate sump, only granular backfill for the tank was encountered. The sump was backfilled with this granular material upon completion of the installation. A 1-inch–diameter HDPE air line was tied into the pneumatic line from the existing blower building and was installed to the compressor building in the same trench as the landfill gas line. A tee and ball valve were installed at the collection sump to supply compressed air to the QED pneumatic pump. All belowground piping included a tracing wire installed above the piping to locate the pipe in the future. Plan Sheet 2 and Photographs 3, 4, 5, and 13 in Appendix A show how the piping from the blower building ties into the condensate sump, the

leachate collection tank, and the landfill gas compression skid. In March, leachate from the conditioning building was modified to tie into the sump, instead of the forecmain from the landfill. Photograph 13 in Appendix A shows the modification.

2.2 Landfill Gas Compression Building

The landfill gas compression skid, which consists of a compressor and a chiller unit, is made up of two prefabricated skid-mounted units that were installed at HOD Landfill. The skid is contained within a 24 foot by 24 foot Wick building. The compressor building was constructed on a 10-inch–thick concrete slab on grade transitioning to a 12-inch–thick outer slab with No. 5 rebar placed 12 inches on-center throughout the slab (see Detail 2 on Plan Sheet 2). The concrete subgrade consisted of 3 to 3.5 feet of pea gravel, since the existing frozen soil was removed prior to pouring the concrete slab. The concrete slab was poured on February 19, 2003, and was protected from the freezing temperatures during curing with a visqueen barrier and frost blankets until March 10, 2003. Three concrete cylinders were taken from the slab pour for strength verification, and the breaks showed that the final strength achieved was above 5,000 psi. The utility building was partially fabricated off-site, delivered on March 7, 2003, and assembled on-site from March 10, 2003, to March 26, 2003, by Wick Builders. Photographs 9 and 11 in Appendix A show the building being constructed and the completed building. All of the electrical and mechanical equipment in the compressor building is classified as Class I, Division II. The exhaust equipment installed as part of the compressor building consists of a ½-horsepower 24-inch–diameter Dayton hazardous location exhaust fan, a 5-horsepower 30-inch–diameter explosion-proof exhaust fan with air collection hoods, single-panel aluminum exhaust shutters, and two 30-inch by 30-inch Greenheck ESD-403 intake louvers. Some instruments and controls for the conditioning building were tied back to the controls in the blower/flare system. Photograph 6 in Appendix A shows the electrical conduit for this connection by the blower building.

2.3 Landfill Gas Compression and Conditioning Equipment

Information regarding the Enerflex compressor and gas conditioning systems is contained in the Gas to Energy Operations and Maintenance Report (RMT 2004) and on Plan Sheet 4. The compressor will compress the landfill gas (LFG) to approximately 95 psi (see Photograph 12 in Appendix A). The gas chiller that is part of the skid unit will drop the LFG temperature to approximately 0° to –20°F to remove liquid and contaminants from the LFG prior to routing it to the microturbines. Cooling the gas will knock out the majority of the siloxanes and some of the volatile organic compounds (VOCs) present in the LFG. The 14-inch–diameter, 30-inch–long knock-out vessels were installed on January 28 and 29, 2004. These vessels are large enough to knock out the liquid that results when the gas is cooled. An activated carbon unit is also installed on the skid to remove additional siloxanes and VOCs after the LFG is cooled. The

condensate generated by the chillers is routed to the existing 30,000-gallon leachate collection tank via a 2-inch–diameter SDR 11 HDPE pipe from the gas conditioning building. This piping is first routed to the condensate sump, where it is then pumped to the leachate tank. This piping that routes the condensate to the condensate sump and leachate collection tank is shown on Plan Sheet 2.

2.4 Gas Pipeline

Compressed and conditioned LFG is routed from the gas conditioning building at HOD Landfill approximately 2,300 feet through a 4-inch–diameter SDR 9 HDPE pipeline to the microturbine building, which is located on the Antioch High School property. The safety factor for this pipe, at the working pressure of the LFG being routed, is approximately 4. Plan Sheet 1 shows the as-built locations and pipe profile of the piping on the landfill. The gas pipeline was installed from the gas conditioning building to the western boundary of HOD Landfill using open trenching techniques, with the remainder of the transmission line installed using directional drilling techniques. In both cases, the HDPE piping was fusion-welded.

2.4.1 Gas Pipeline Trenching

The gas pipeline was installed by open trenching through the landfill surface for an approximate distance of 510 feet. The top of the pipe was installed at a minimum depth of 3 feet below the existing ground surface on the landfill. Plan Sheet 1 shows the as-built piping location and a profile of the piping from the landfill to the school. Plan Sheet 2 shows a detail of the landfill final cover construction. No waste was encountered or disturbed during the pipe installation. The landfill cover above the pipe was reconstructed and recompacted. The cover consisted of a 2-foot layer of clay and a 1-foot layer of vegetation. The trench was revegetated, and all other areas disturbed were revegetated and restored after the pipe and building installations were completed.

2.4.2 Gas Pipeline Directional Drilling

The pipeline was installed via directional drilling from the western boundary of the HOD Landfill site to the Antioch Community High School. The pipeline was directionally drilled under the existing stream and McMillen Road, and along McMillen Road. Following completion of the piping, the line from the conditioning building to the microturbine building was air-tested at 150 psi for 30 minutes with no pressure loss (see Photograph 10 in Appendix A). Photographs 7 and 8 in Appendix A shows the horizontal drilling operations.

2.5 System Startup

System startup and troubleshooting began on October 8, 2003, by RMT, Enerflex, and Unison Solutions. This work continued until February 2004, when the microturbine and heat exchanger system was fully operational and the blower and flare were operating at the landfill. During the system startup activities, the microturbines were initially operational only part time as problems were worked out. By late December 2003, the gas-to-energy system was continually operating with short periods of downtime associated with oil changes, carbon filter replacement, and other minor adjustments needed to optimize system operation. At various times during startup activities, the flare was shut down. This was done either for maintenance to the blower/flare system or to test the gas-to-energy system in the blower/flare bypass mode.

2.6 Surface Water Management

The following construction-related surface water management measures were implemented as required during the construction of this project. Erosion and sediment control practices were implemented during some of the ground-disturbing activities. The control practices included installing silt fencing around the receiving pits for the horizontal drilling operations. Since the trenching at the landfill was done in the winter in frozen ground and backfilled the same day, no erosion control was needed. The cover was seeded, fertilized, and mulched in appropriate locations in September 2003, which was after site grading activities were completed and when weather conditions were more conducive for establishing vegetation.

2.7 Institutional Controls

The institutional controls that are currently present at the HOD Landfill were unaffected by site activities. In the event that this work impacts fencing or other institutional controls, the controls will be replaced at the completion of the project per the previously approved design plans (RMT, 2000).

Section 3
Operation and Maintenance

The landfill gas-to-energy system will be owned by the Antioch School System. A qualified contractor will operate the gas-to-energy system with assistance from maintenance staff from the Antioch High School. The existing landfill gas and leachate collection systems at the HOD Landfill site will continue to be operated per the USEPA-approved Operations and Maintenance (O&M) Plan (RMT, 2001b). A separate O&M Plan for the gas-to-energy system is being prepared and will be submitted to the regulatory agencies. This will include maintenance schedules for the various system components, including the microturbines, compression system, chilling system, and heat exchangers, as recommended by the manufacturer or supplier. In addition, startup and shutdown procedures will be described in the O&M Plan.

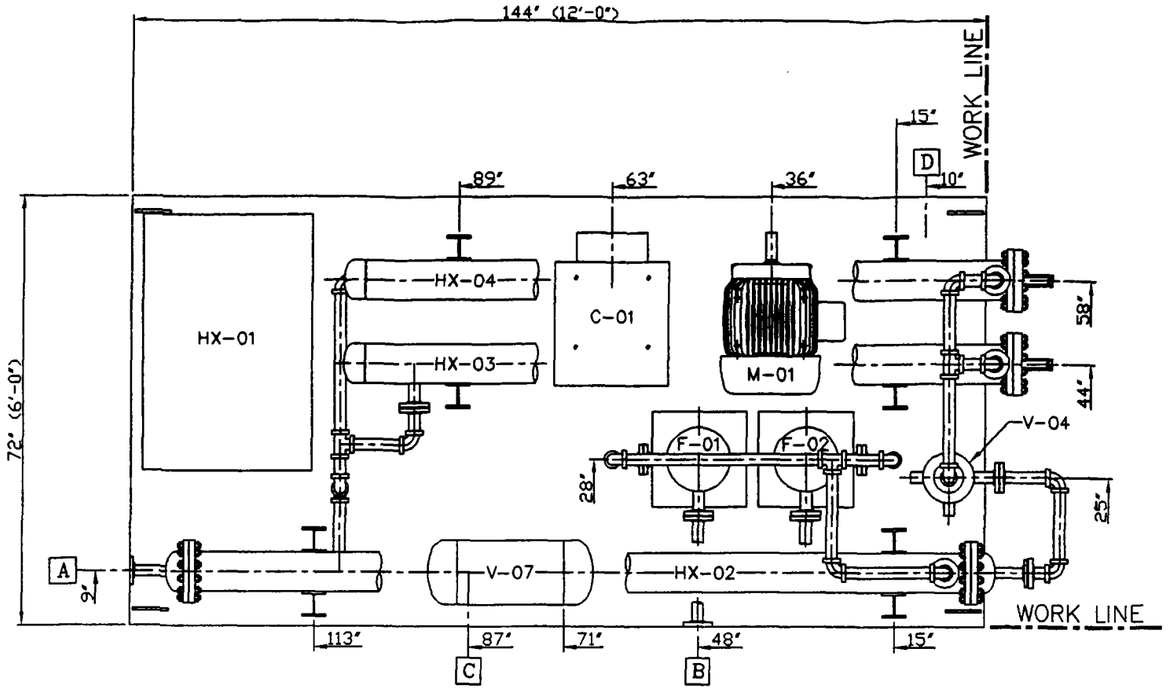
Section 4
References

RMT, Inc. 2000. Final remedial design report. HOD Landfill site.

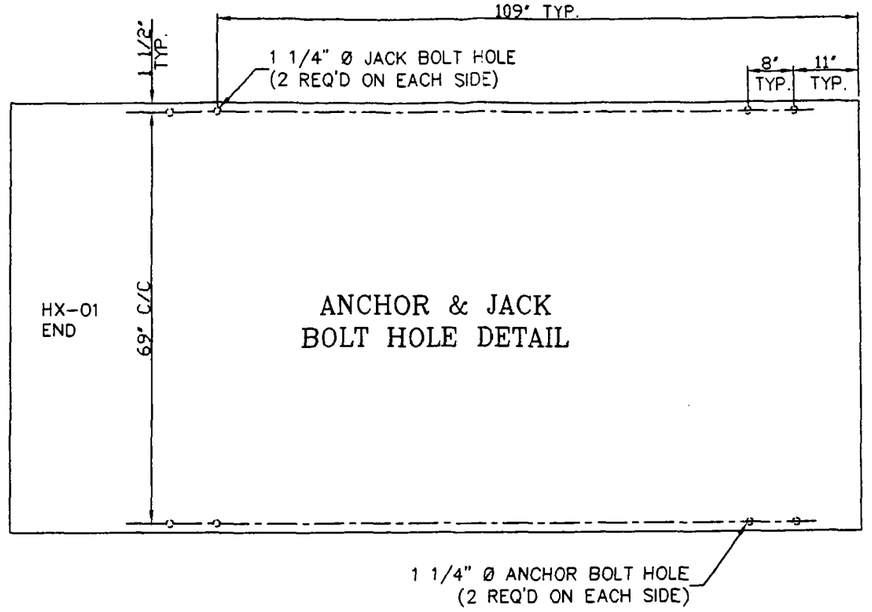
RMT, Inc. 2001a. Interim remedial action report. HOD Landfill.

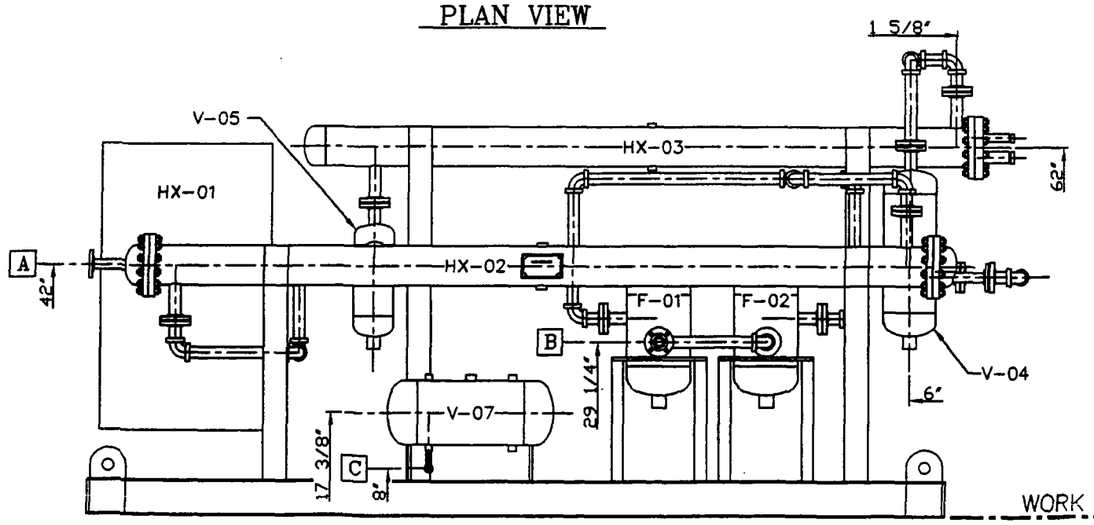
RMT, Inc. 2001b. Final operations and maintenance plan. HOD Landfill.

RMT, Inc. 2004. Operations and maintenance plan, gas-to-energy system. Antioch Community High School.

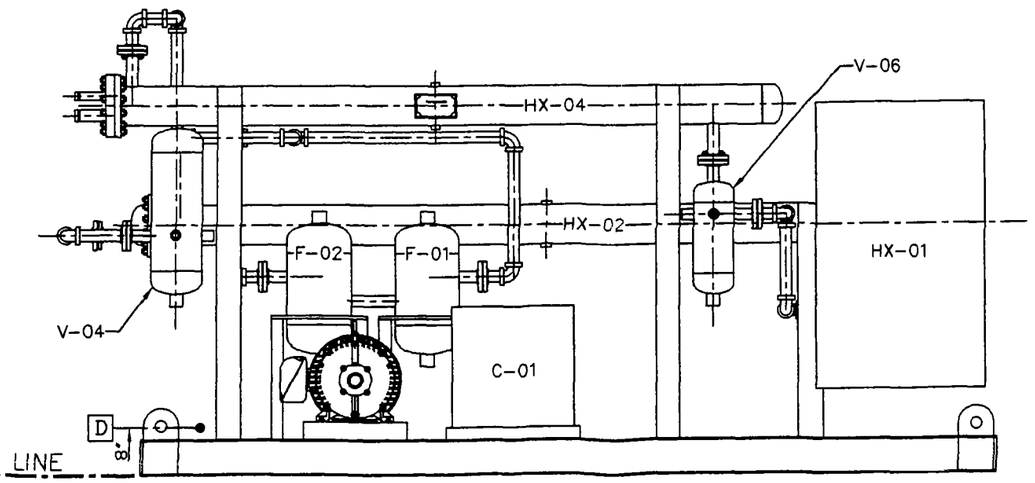


PLAN VIEW





FRONT SIDE VIEW



BACK SIDE VIEW

ITEM	QTY.	TYPE	DESCRIPTION
D	1	1/2" 3000#	INSTRUMENT AIR
C	1	1/2" 3000#	CONDENSATE DRAIN
B	1	1 1/2" 150# RF	GAS OUTLET
A	1	1 1/2" 150# RF	GAS INLET

CUSTOMER CONNECTIONS

RELEASE DATE _____
ENGINEERING _____
QUALITY CONTROL _____
SHOP SUPERINTENDANT _____

NUMBER | DESCRIPTION

REFERENCE DRAWINGS

NO.	DESCRIPTION	DATE	BY
1	FABRICATION	7/21/03	MG
0	APPROVAL	7/15/03	KLR

REVISIONS

ENERFLEX SYSTEMS, INC.
2408 Mercury Ave. Odessa, Texas 79763
Tel: 1.915.381.0011 1.800.478.0011 Fax: 1.915.381.0029
www.enerflex.com

DESCRIPTION: ASSEMBLY
REFRIGERATION
CUSTOMER: ALLIANT ENERGY
SCALE: 1"=1'-0" | W.O. NO. 03-5223
DRAWN: KLR | NO. REQ'D. 1
DATE: 7/11/03
APV'D:
DWG NO. 5223R-02 | REV. 1

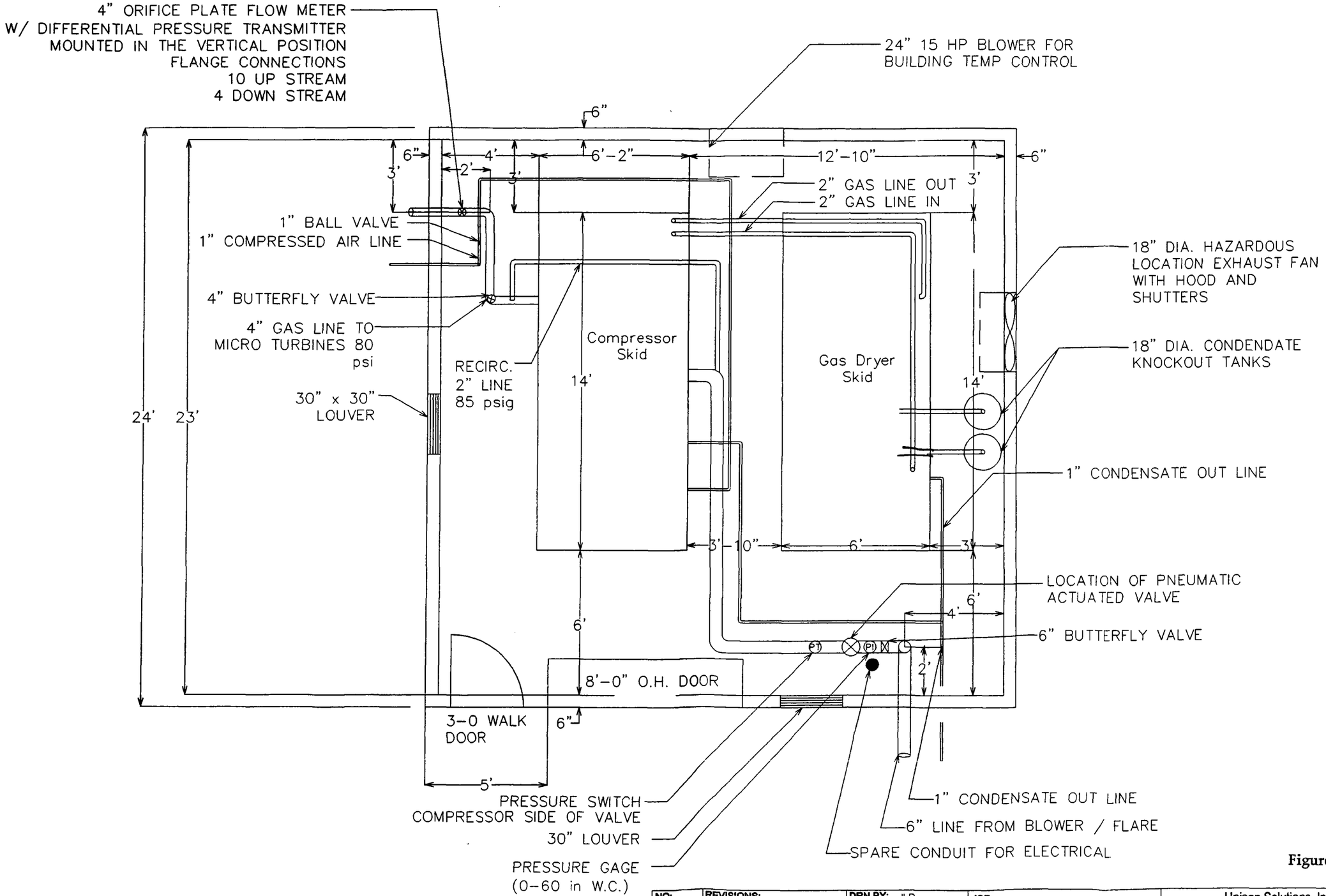


Figure 2

NO:	REVISIONS:	DRN BY: JLP	JOB: ANTIOCH HIGH SCHOOL	Unison Solutions, Inc. 2728 ASBURY ROAD SUITE 320 DUBUQUE, IA 52001 563-585-0987 Fax: 563-585-0970 WWW.UNISONSOLUTIONS.COM
		APPROVED BY:		
		DATE: 6-9-03		
		SCALE: 1/4" = 1'	SHEET: COMPRESSION SKID BUILDING	
	FILE: Antioch/skid compressor building			

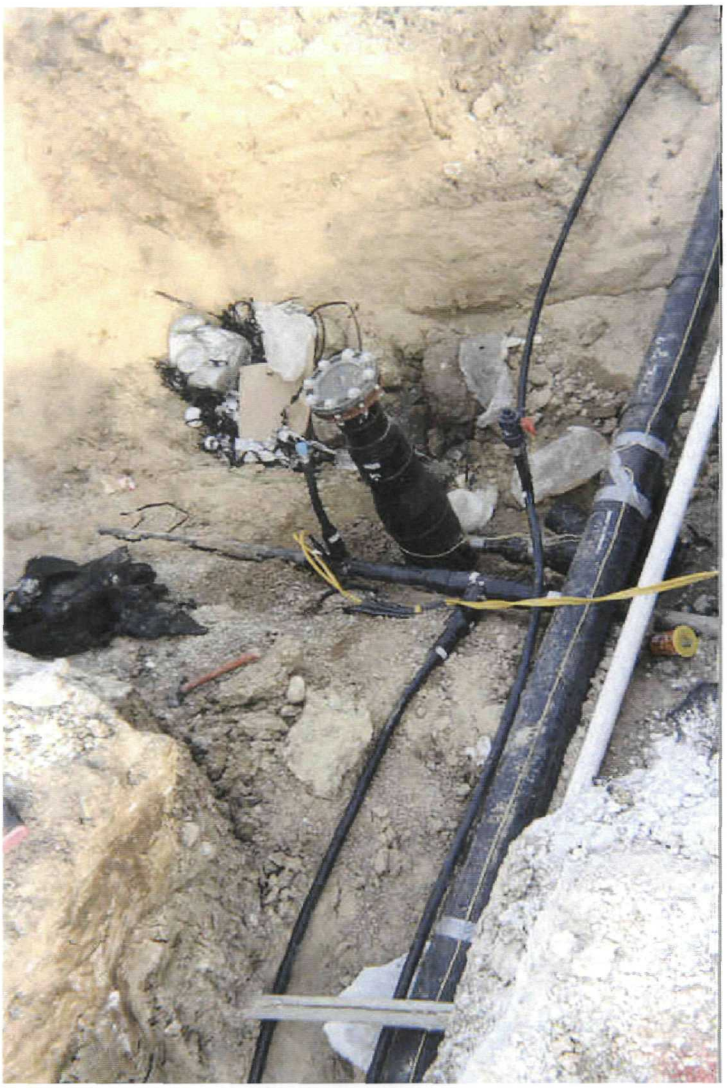
Appendix A
Photographs

Photograph 1: Tie-in to existing blower building.

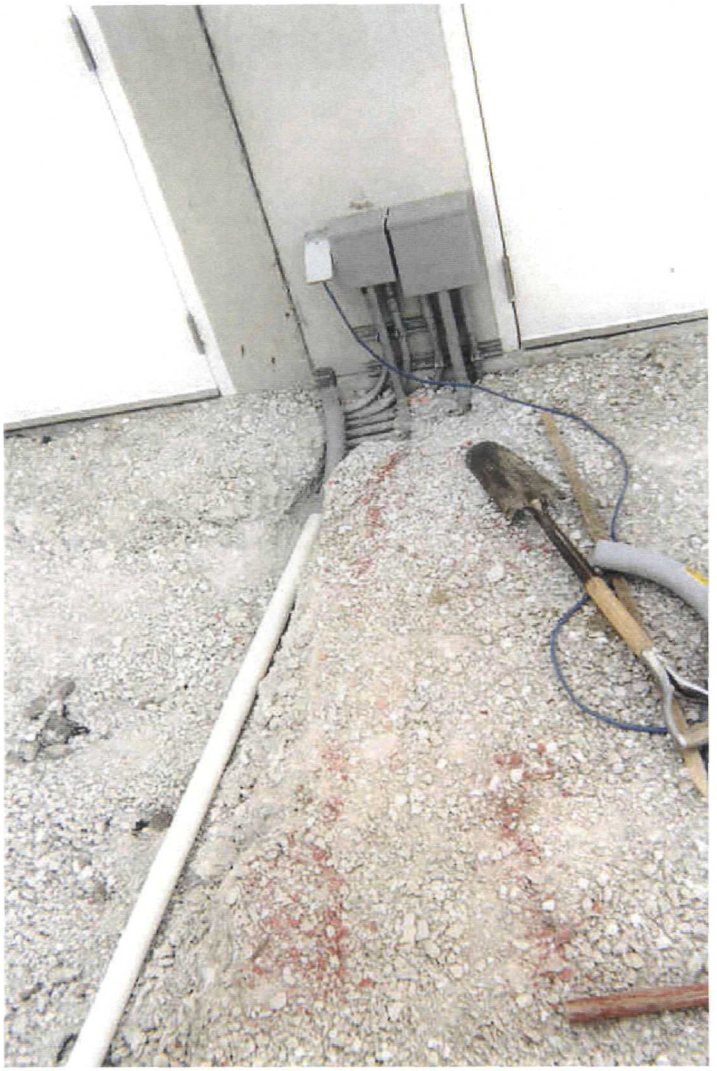
Photograph 2: Valve installed inside blower building.

Photograph 3: Gas piping from blower building to compression building location.

Photograph 4: Excavation of condensate sump by blower building.



Photograph 5: Condensate sump tie-in to existing piping.



Photograph 6: **Electrical conduit installed at blower building from compressor building.**

Photograph 7: Horizontal drilling.

Photograph 8: Piping installed during horizontal drilling.

Photograph 9: Compressor building installation.

Photograph 10: Air-testing gas line from compressor building to microturbine building.

Photograph 11: Completed compressor building.

Photograph 12: Compression skid.

Photograph 13: Changing condensate sump tie-in to existing piping.

NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER.

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT:

HOD LANDFILL
LANDFILL GAS SYSTEM MODIFICATION REPORT
ANTIOCH, ILLINOIS

SHEET TITLE:

AS-BUILT PIPE LAYOUT AND PROFILE

DRAWN BY: DEFOEJ	SCALE:	PROJ. NO. 5314.46/GAS
CHECKED BY: BJP	AS SHOWN	FILE NO. PROFILE.DWG
APPROVED BY: MJT	DATE PRINTED: JUL 06 2004	SHEET 1 OF 4
DATE: MAY 2004		

RMT INC.

744 Heartland Trail
Madison, WI 53717-1934

P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

FROM
TE SUMP
4
3

TIE-IN (PLAN VIEW)

NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER.

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

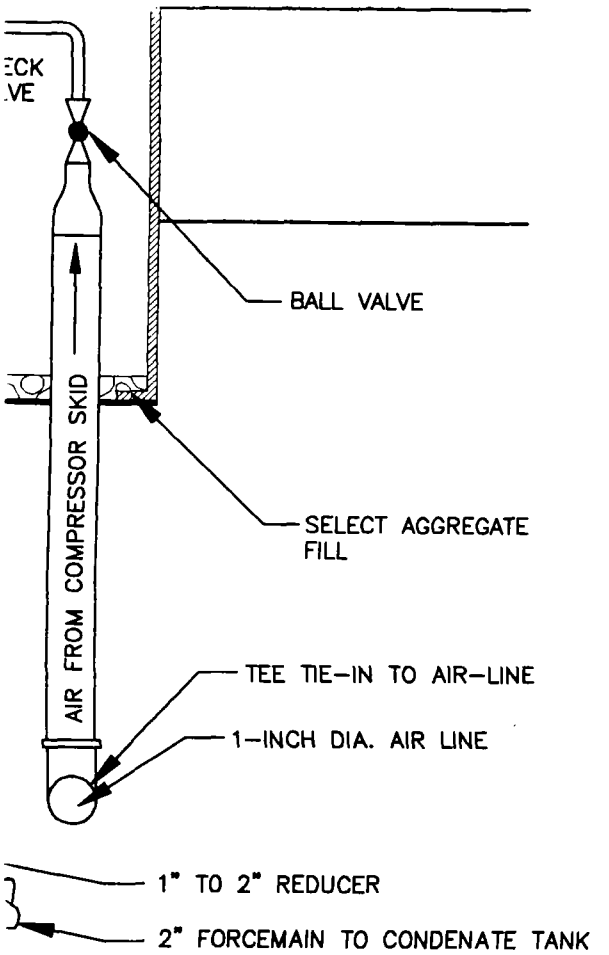
PROJECT:
HOD LANDFILL
LANDFILL GAS SYSTEM MODIFICATION REPORT
ANTIOCH, ILLINOIS

SHEET TITLE:
GAS CONDITIONING CONNECTION TO EXISTING SYSTEM

DRAWN BY: DEFOEJ	SCALE:	PROJ. NO. 5314.46/GAS
CHECKED BY: BJP	AS SHOWN	FILE NO. DETAIL1.DWG
APPROVED BY: MJT	DATE PRINTED: JUL 06 2004	SHEET 2 OF 4
DATE: MAY 2004		

RMT INC.
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

27



NOTE: THESE PLANS ARE ACCOMPANIED BY A REPORT OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED AND REVIEWED TOGETHER.

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT:

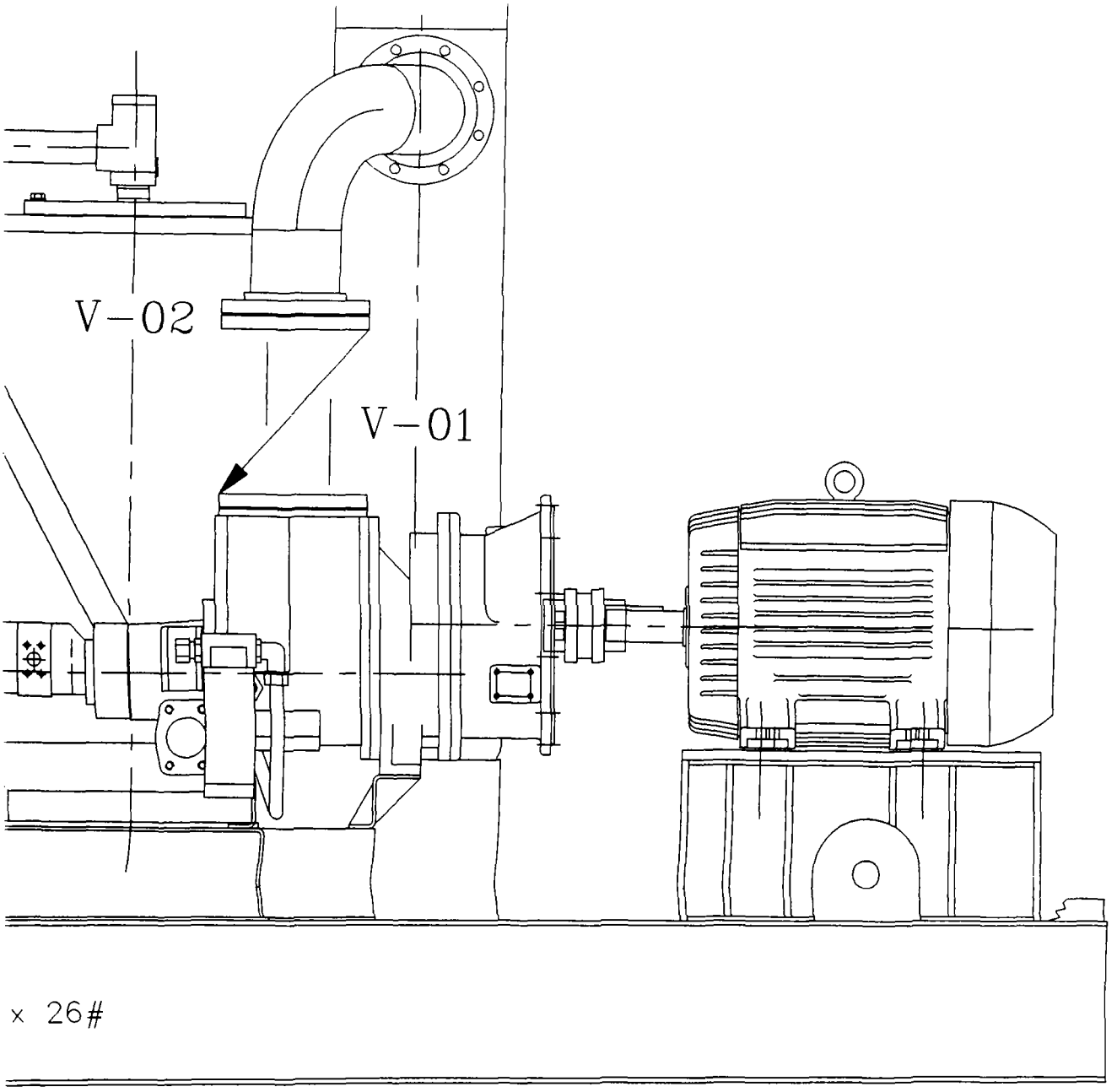
HOD LANDFILL
LANDFILL GAS SYSTEM MODIFICATION REPORT
ANTIOCH, ILLINOIS

SHEET TITLE:

DETAILS

DRAWN BY: DEFOEJ	SCALE:	PROJ. NO. 5314.46/GAS
CHECKED BY: BJP	AS SHOWN	FILE NO. DETAIL3.DWG
APPROVED BY: MJT	DATE PRINTED: JUL 06 2004	SHEET 3 OF 4
DATE: MAY 2004		

RMT INC.
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334



x 26#

VIEW

AS OUTLET	1/3/03	KLR
PTION	DATE	BY
ISIONS		

ENERFLEX SYSTEMS, INC.
2408 Mercury Ave. Odessa, Texas 79763
Tel: 1.915.381.0011 1.800.478.0011 Fax: 1.915.381.0020
www.enerflex.com

DESCRIPTION
ASSEMBLY
LeRoi COMPRESSOR PACKAGE

CUSTOMER
RMT, INC.

SCALE:	NONE	W.O. NO.	02-5227
DRAWN:	KLR	NO. REQ'D.	1
DATE:	11/7/02	DWG NO.	5227-02 REV. 1
APV'D:			

Appendix B
Inspection and Maintenance Reports

Inspection Reports

FACILITY INSPECTION REPORT
H.O.D. LANDFILL
ANTIOCH, ILLINOIS

NOTE: Inspector using this form shall be familiar with Section 4 of the O&M Plan. Mark the location of any potential problems on the attached site map regardless if maintenance is required.

DATE: 1/16/03 INSPECTOR: Jason Schoephoester

TEMPERATURE/WEATHER: Cloudy, Breezy

25 °F, 30.2" Hg Falling

GROUND CONDITIONS: Surface frozen, some snow patches

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
Final Cover			
1. Vegetation		☒	☐
2. Erosion		☒	☐
3. Burrowing		☒	☐
4. Settlement	slight settling around vault boxes, especially on Eastern portions of LF.	☒	☐
5. Leachate seeps		☒	☐
6. Other		☐	☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance

Groundwater Wells/Gas Probes

Describe below (see next page) the nature of any damage, deterioration, or vandalism observed and required maintenance. At a minimum, the following components of each well and probe shall be inspected: (1) protective casing; (2) well stick-up, cap, and conditions inside protective casing; (3) surface seal; (4) well I.D. label; (5) locks.

1. Identify well/probe number and problems observed, if any. Need Abus locks from WM Av CP-3, 4A, and 5A ☒ ☐

Extraction Wells/Condensate Sumps

Inspect well assemblies for loose bolts, cracks in pipes, air or liquid leaks in pipes, broken valve controls, evidence of differential settlement (such as stretching of the flex hose), or other evidence of integrity failure. Describe the nature of any damage, deterioration, or vandalism observed and required maintenance. Identify the extraction well number for problems observed, if any.

1. Differential settlement Need vault box extensions at GW-21, GWF-5, and GW-20 in near future or regrading ☒ ☐
2. Hardware, locks, pipes, and valves ☒ ☐
3. Pump/Sump Drained surface water from several sumps ☒ ☐
4. Leaks ☒ ☐
5. Other ☐ ☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
Extraction System Piping			
1.	Header isolation valves	☒	☐
2.	Condensate surging	☒	☐
3.	Settlement	☒	☐
4.	Other	☐	☐
Blower Facility			
1.	Piping, fittings, valves, seals	☒	☐
2.	Blower Blower not running, due to bad igniter	☒	☐
3.	Exhaust fan	☒	☐
4.	Gas sensor	☒	☐
5.	Other	☐	☐
Flare			
1.	Flame arrestor	☒	☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
2.	Igniter Igniter not working, taken out + back to office to measure and order new assembly	☐	☒
3.	Installation	☒	☐
4.	Solenoids	☒	☐
5.	Other	☐	☐

Fencing and Signs

1.	Fencing	☒	☐
2.	Gates and locks	☒	☐
3.	Signs	☒	☐
4.	Other	☐	☐

Access Road

1.	Accessibility	☒	☐
2.	Other	☐	☐

FACILITY INSPECTION REPORT
H.O.D. LANDFILL
ANTIOCH, ILLINOIS

NOTE: Inspector using this form shall be familiar with Section 4 of the O&M Plan. Mark the location of any potential problems on the attached site map regardless if maintenance is required.

DATE: 2/5/04 INSPECTOR: Jason Schoephoester

TEMPERATURE/WEATHER: Mostly Cloudy, Breezy upper 20's °F

GROUND CONDITIONS: Frozen, 4-6" snow cover

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
Final Cover			
1. Vegetation		☒	☐
2. Erosion		☒	☐
3. Burrowing		☒	☐
4. Settlement	Some settlement around vaults, mostly on eastern LF, will be addressed in spring/summer	☒	☐
5. Leachate seeps		☒	☐
6. Other		☐	☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance

Groundwater Wells/Gas Probes

Describe below (see next page) the nature of any damage, deterioration, or vandalism observed and required maintenance. At a minimum, the following components of each well and probe shall be inspected: (1) protective casing; (2) well stick-up, cap, and conditions inside protective casing; (3) surface seal; (4) well I.D. label; (5) locks.

1. Identify well/probe number and problems observed, if any. Need Abus locks from WM for GP-3, 4A, and 5A ☒ ☐

Extraction Wells/Condensate Sumps

Inspect well assemblies for loose bolts, cracks in pipes, air or liquid leaks in pipes, broken valve controls, evidence of differential settlement (such as stretching of the flex hose), or other evidence of integrity failure. Describe the nature of any damage, deterioration, or vandalism observed and required maintenance. Identify the extraction well number for problems observed, if any.

1. Differential settlement vault boxes extensions or raising/regrading at GW-21, GWF-5, and GW-20. Will be addressed in spring/summer construction ☐ ☒
2. Hardware, locks, pipes, and valves _____ ☒ ☐
3. Pump/Sump _____ ☒ ☐
4. Leaks _____ ☒ ☐
5. Other _____ ☐ ☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
Extraction System Piping			
1.	Header isolation valves	☒	☐
2.	Condensate surging	☒	☐
3.	Settlement	☒	☐
4.	Other	☐	☐
Blower Facility			
1.	Piping, fittings, valves, seals	☒	☐
2.	Blower	☒	☐
3.	Exhaust fan	☒	☐
4.	Gas sensor Recalibrated Compressor room sensor — still reading ~1% CH_4. Recalibrated 2nd time.	☒	☐
5.	Other	☐	☐
Flare			
1.	Flame arrestor	☒	☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
2.	Igniter Igniter replaced w/ new unit.	☒	☐
3.	Installation	☒	☐
4.	Solenoids	☒	☐
5.	Other	☐	☐

Fencing and Signs

1.	Fencing	☒	☐
2.	Gates and locks	☑	☐
3.	Signs	☒	☐
4.	Other	☐	☐

Access Road

1.	Accessibility Difficult access due to drifting snow on Eastern end of LF	☒	☐
2.	Other	☐	☐

FACILITY INSPECTION REPORT
H.O.D. LANDFILL
ANTIOCH, ILLINOIS

NOTE: Inspector using this form shall be familiar with Section 4 of the O&M Plan. Mark the location of any potential problems on the attached site map regardless if maintenance is required.

DATE: 3/16 - 3/18/04 INSPECTOR: Jason Schoephoester

TEMPERATURE/WEATHER: 3/16 - cloudy, low 30's
3/17 - cloudy w/snow showers, low 30's; 3/18 - cloudy w/snow, upper 20's

GROUND CONDITIONS: Moist to wet, some snow cover
3/17 + 3/18/04

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
Final Cover			
1. Vegetation		☒	☐
2. Erosion		☒	☐
3. Burrowing		☒	☐
4. Settlement		☒	☐
5. Leachate seeps		☒	☐
6. Other		☐	☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance

Groundwater Wells, Gas Probes

Describe below (see next page) the nature of any damage, deterioration, or vandalism observed and required maintenance. At a minimum, the following components of each well and probe shall be inspected: (1) protective casing; (2) well stick-up, cap, and conditions inside protective casing; (3) surface seal; (4) well I.D. label; (5) locks.

1. Identify well/probe number and problems observed, if any. _____ ☒ ☐

Extraction Wells/Condensate Sumps

Inspect well assemblies for loose bolts, cracks in pipes, air or liquid leaks in pipes, broken valve controls, evidence of differential settlement (such as stretching of the flex hose), or other evidence of integrity failure. Describe the nature of any damage, deterioration, or vandalism observed and required maintenance. Identify the extraction well number for problems observed, if any.

1. Differential settlement Some vault box settlement – will be addressed this coming construction season ☒ ☐
2. Hardware, locks, pipes, and valves QED broke off cycle counter @ GW-29, they are sending a replacement ☒ ☐
3. Pump/Sump _____ ☒ ☐
4. Leaks _____ ☒ ☐
5. Other need to replace broken off drain valve on GWF-10, currently plugged w/ PVC plug. ☒ ☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
Extraction System Piping			
1.	Header isolation valves	☒	☐
2.	Condensate surging	☒	☐
3.	Settlement	☒	☐
4.	Other	☐	☐
Blower Facility			
1.	Piping, fittings, valves, seals	☒	☐
2.	Blower	☒	☐
3.	Exhaust fan	☒	☐
4.	Gas sensor	☒	☐
5.	Other	☐	☐
Flare			
1.	Flame arrestor	☒	☐

ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance
2.	Igniter	☒	☐
3.	Installation	☒	☐
4.	Solenoids	☒	☐
5.	Other	☐	☐

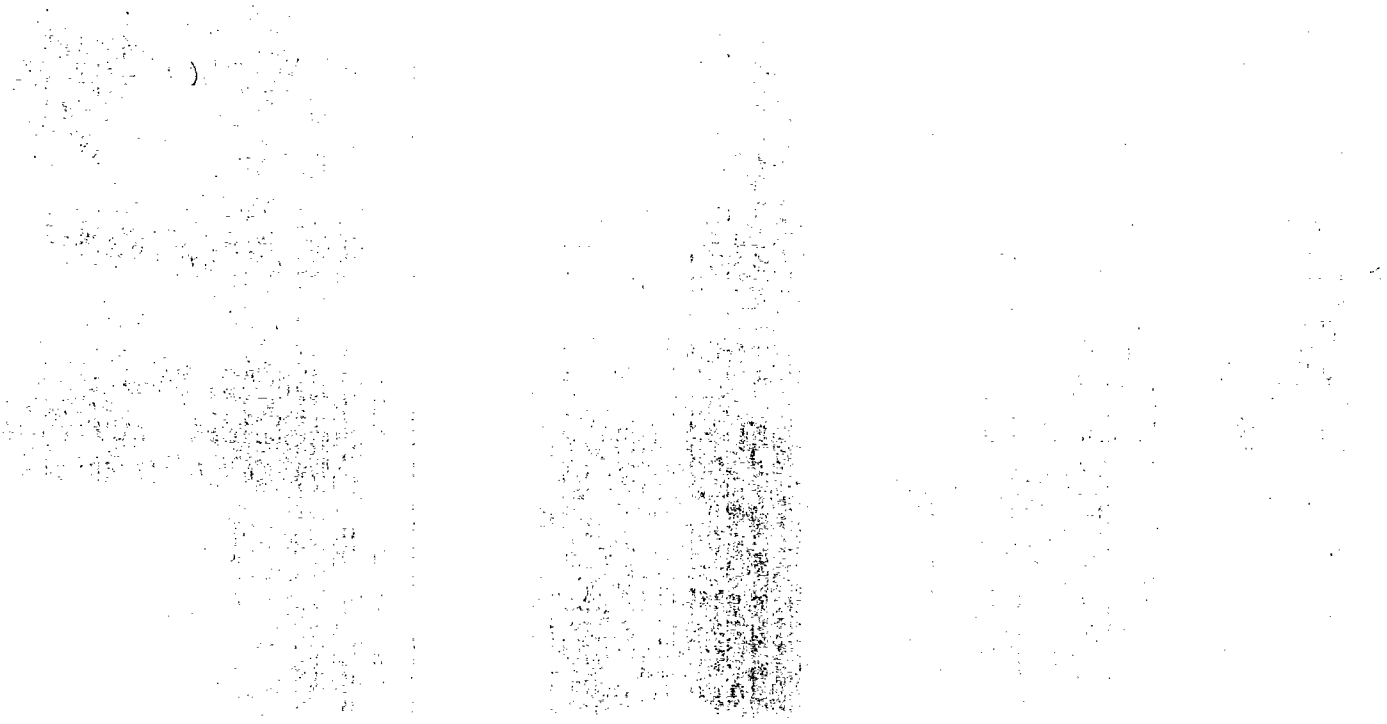
Fencing and Signs

1.	Fencing	☒	☐
2.	Gates and locks	☒	☐
3.	Signs	☒	☐
4.	Other	☐	☐

Access Road

1.	Accessibility	☒	☐
2.	Other	☐	☐

Maintenance Reports



MAINTENANCE REPORT
H.O.D. LANDFILL
ANTIOCH, ILLINOIS

Prepared By: Jason Schaephoester

Date Prepared: 1/16/04

Date(s) Maintenance Performed: 1/16/04

Name of Contractor(s): N/A

Type of Maintenance	Scheduled	Responsive	Nature of Work Performed/Location
☐ Groundwater well	☐	☐	
☐ Gas probe	☐	☐	
☒ Extraction wells/ condensate sumps		☒	Drained several vaults
☐ Extraction system piping	☐	☐	
☐ Blower facility	☐	☐	
☒ Flare	☐	☒	see attached sheet
☐ Vegetation	☐	☐	
☐ Erosion control		☐	
☐ Settlement		☐	
☐ Access road	☐	☐	
☐ Fencing/Signs	☐	☐	
☐ Leachate seep		☐	
☐ Other		☐	

DETAILED DESCRIPTION OF MAINTENANCE PERFORMED:

(Attach additional pages if necessary and contractor's invoice with description of services rendered, if applicable).

- Attempted to restart flare, igniter would not spark to ignite pilot gas. Removed igniter assembly and igniter was badly worn and loose. Took assembly back to office to measure length and order new assembly and spare from LFG+E
- Lowered "low temp flare shutdown" setting from 1000°F to 500°F, to allow the flare to run under low flow + temp conditions.
- Drained surface water from the following vaults: GWF-5, GW-21, GW-20, CS-2, LP-6, GWF-4, GW-25, GWF-8, MHW, LP-2, LP-4, LP-3
- Checked all CS's.

Cost: $ _____

Professional Engineer or Firm Preparing Documentation: _____
(if applicable, i.e., settlement repair, leachate seep repair)

MAINTENANCE REPORT
H.O.D. LANDFILL
ANTIOCH, ILLINOIS

Prepared By: Jason Schoephoester

Date Prepared: 2/5/04

Date(s) Maintenance Performed: 2/5/04

Name of Contractor(s): N/A

Type of Maintenance	Scheduled	Responsive	Nature of Work Performed/Location
☐ Groundwater well	☐	☐	
☐ Gas probe	☐	☐	
☒ Extraction wells/ condensate sumps		☒	Drained surface water from GW-21 & GW-5 Got pump @ GW-22 functioning Checked condensate sumps.
☐ Extraction system piping	☐	☐	
☒ Blower facility	☐	☒	Replaced bad flame igniter unit
☐ Flare	☐	☐	
☐ Vegetation	☐	☐	
☐ Erosion control		☐	
☐ Settlement		☐	
☐ Access road	☐	☐	
☐ Fencing/Signs	☐	☐	
☐ Leachate seep		☐	
☐ Other		☐	

DETAILED DESCRIPTION OF MAINTENANCE PERFORMED:

(Attach additional pages if necessary and contractor's invoice with description of services rendered, if applicable).

Cost: $_____

Professional Engineer or Firm Preparing Documentation: _____
(if applicable, i.e., settlement repair, leachate seep repair)

MAINTENANCE REPORT
H.O.D. LANDFILL
ANTIOCH, ILLINOIS

Prepared By: Jason Schoephoester

Date Prepared: 3/16 - 3/18/04

Date(s) Maintenance Performed: 3/16 - 3/18/04

Name of Contractor(s): N/A

Type of Maintenance	Scheduled	Responsive	Nature of Work Performed/Location
☐ Groundwater well	☐	☐	
☒ Gas probe	☒	☐	Placed locks on probes GP-3, 4A, 5A
☒ Extraction wells/ condensate sumps		☒	see next page
☐ Extraction system piping	☐	☐	
☐ Blower facility	☐	☐	
☐ Flare	☐	☐	
☐ Vegetation	☐	☐	
☐ Erosion control		☐	
☐ Settlement		☐	
☐ Access road	☐	☐	
☐ Fencing/Signs	☐	☐	
☐ Leachate seep		☐	
☐ Other		☐	

DETAILED DESCRIPTION OF MAINTENANCE PERFORMED:

(Attach additional pages if necessary and contractor's invoice with description of services rendered, if applicable).

- Called Compression Air Systems regarding oil leak on conditioning compressor - they need to order the parts for an apparent shaft seal leak.
- Drained surface water from 20 vaults
- Extended flex hoses on wellheads @ GWF-5, GWF-8, and MHE. Sealed leak on wellhead at GW-20.
- Plugged broken off drain line hole on GWF-10
- Replaced / Changed out quick disconnect sample port(s) on wells GWF-4, GW-17, GW-19, GW-20, GW-21, GW-22, GW-25, GW-32, LPZ, LP11
- Don Schultz from QED onsite to service wells: Replaced air line / checked GWF-4, Replaced pump @ GW-24 which was out for cleaning, replaced air / leachate lines and regulator on GW-29, cleaned / adjusted pump at GW-18.
- (None general maintenance as in attached field notes.)

Cost $ _____

Professional Engineer or Firm Preparing Documentation: _____
(if applicable, i.e., settlement repair, leachate seep repair)

PROJECT/PROPOSAL NAME/LOCATION: HOD LF		PROJECT/PROPOSAL NO. 5314.42 / 6190.22
SUBJECT: 1st Quarter Monitoring		
PREPARED BY: JRS	DATE: 3/16-3/18/04	FINAL ☐
CHECKED BY:	DATE:	REVISION ☐

3/16/04

onsite ~ 830

Turbines running, flare/blower off

Flow to turbines: 155 cfm

Compressor skid hours: 2041

Flare Blower hours: 92843

cycles: 362

Leachate load-out pump: hours 133.2

cycles 389

Gallons leachate pumped: 2,028,610

Leachate tank level: 4.5'

Compressor psi: 113 - last serviced 8/22/03

temp: 188 11/11/03 (Dryer only)

- Checked vacuum far corner of LF (NE): +2" header pressure
- started flare w/turbines per conversation w/ Mark T.

Flow to flare: 110 cfm

to turbines: 163 cfm

Flare temp: 1178°F

Vac into blower: -7" H_2O

Gas temp: 44°F

To flare: +1.2" H_2O

CH4: 40.0% O_2: 7.8% - checked wells for bad leaks

- Flex hose was pulled off @ GWF-5, repaired.
- Drain line broken off @ GWF-10, plugged hole.
- After repairs - Vac into blower: -15" H_2O

CH4: 64.1% CO_2: 34.8% O_2: 1.0%

- Contacted Mel @ Compression Air Systems of Milwaukee w/location of oil leak (looks like it's leaking near shaft seal) - he will check on parts and tech's availability.

PROJECT PROPOSAL NAME/LOCATION HGOVF		PROJECT PROPOSAL NO.	
SUBJECT			
PREPARED BY	DATE	FINAL	☐
CHECKED BY	DATE	REVISION	☐

3/16/04 (cont.)

- Began draining/inspecting extraction well vaults:
  Drained surface water from following vaults: GW-21, GWF-5, GWF-4, LP-8, GW-20, GW-23, GW-19, GWF-3, GWF-8, GW-24, GW-25, GW-18, NHW, LP-2, LP-3, LP-1, GW-15, LP-11, LP-4, CS-2
- Pumps in several of the above wells not functioning, since the pump exhaust line filled w/ surface water.
- Once drained, got all pumps pumping and let pump for ~ 2-6 hrs. before turning air off for taking 48 hr leachate level readings.
- Replaced hose clamp on leachate line @ GW-34
- Extended flex hose @ GWF-8
- Extended flex hose @ MHE
- Sealed leak @ GW-20
- Took gas detection probe readings and placed Rhus locks on GP-3, 4A, 5A.

  Flare / Turbine Readings @ 1500

  To Flare: 100 cfm @ 1300°F
  To turbines: 153 cfm - all turbines running
  CH_4: 62.8% CO_2: 34.1% O_2: 1.2%
  Pressure on gas coming into conditioning bldg. = 0" H_2O (+/- 0.5")
  -24" H_2O into blower @ 44°F
  +1.0" H_2O to flare
  Leachate tank level = 5.3'
- Replaced lids onto all vaults - since low temp in the 20's + snow
- Left site ~ 1745

PROJECT/PROPOSAL NAME/LOCATION: HoOLF		PROJECT/PROPOSAL NO.
SUBJECT:		
PREPARED BY:	DATE:	FINAL ☐
CHECKED BY:	DATE:	REVISION ☐

3/17/04

- Arrived on site ~645
- Flow to flare: 100 cfm @ 1170°F ~710
  " " turbines: 135 cfm - all turbines running
  -35" H_2O into Blower @ 42°F
  +0.70" to flare CH_4: 59.8% CO_2: 34.4% O_2: 1.4%
  Leachate tank level: 6.1'
- Drained more surface water that came in overnite from: CWF-5, CW-21, LP-8, CW-20.
- Greg Heideman from Chicago office onsite today to assist.
- Temps recorded in turbine building.

  To school: 189°F To Turbines: 181°F
  From school: 176°F From turbines: 189°F
- Began balancing extraction wells - noticed header vac was increasing quite a lot on the extraction wells and normally good gas producing wells had little to no flow and very low methane concentrations. It appeared as though the well screens on several wells were flooded out.
- Made only minor adjustments to extraction wells due to this fact.
- Flow to flare and turbines continued to drop.

  ~1000 Flow to flare ~ 70 cfm
  " " turbines ~ 100 cfm
  -50" H_2O into blower
- Flow to turbines began to jump around, ranging from 60-120 cfm, but mostly 60-80 cfm.

PROJECT/PROPOSAL NAME/LOCATION: HOD LF		PROJECT PROPOSAL NO.	
SUBJECT:			
PREPARED BY:	DATE:	FINAL	☐
CHECKED BY:	DATE:	REVISION	☐

3/17/04 (cont.)

- Flow to flare gradually dropped down to ~ 35 cfm, even after increasing vac to well field.
- Flare went down @ ~ 11[10] and turbines followed, due to pulling air in through flare.
- Restarted conditioning system ~ 11[15] w/ no flare.
- Had to purge line running to turbines
- Turbines back on line ~ 12[00]. CH4: 58% O_2: < 2%
- All turbines running, but only 80-95 cfm to turbines and still ~ -45" H_2O to well field.
- Gas to chilling tubes running ~ 85°F - opened louvre on compressor skid ~ 30% and opened door partially to bring temp down to low 70's °F.
- Don Schultz (QED) on site servicing pumps.
  - cleaned/adjusted GW-18
  - replaced airline/checked GWF-4
  - replaced pump that was out for cleaning/checked @ GW-24
  - replaced pump/regulator @ GW-29. He broke off cycle counter, so is sending us new one. [out for service]
- Finished balancing well field, only making minor adj. due to watered out screens.
- Conditioning system went down ~ 1[30]. Gas into chilling tubes had dropped to ~ 62°F. Chilling tubes had frozen up. System kicking off on high PT100 temp. Recirculated gas to thaw chilling tubes, till PT-100 < 100psi.
- Restarted System/Turbines ~ 19[30]
- Left site ~ 19[45].

4b

PROJECT/PROPOSAL NAME/LOCATION: Hoff		PROJECT/PROPOSAL NO.
SUBJECT:		
PREPARED BY:	DATE:	FINAL ☐
CHECKED BY:	DATE:	REVISION ☐

3/18/04

- on site ~ 6^45
- Checked turbines - all running fine
- Flowmeter on flare panel not showing any flow to turbines ****
- -38" H_2O to well field
- Started taking leachate levels and draining any further surface water that had entered vaults.
- turned all pumps on after finishing recording leachate levels.
- All pumps cycling rapidly.
- Called PATS to haul out 3 loads leachate today, since tank was nearing 20,000 gals by mid-morning.
- Dryer not functioning properly - purging air out through mufflers and shutting down compressor in flare bldg. Purge valve not set correctly - readjusted, dryer now working.
- Checked turbines - all running - flowmeter still showing: ****

Conditioning Bldg. Readings

PT-100 = 91 CH_4: 58.9% CO_2: 31.5% O_2: 1.5%

TE-100 = 74 2091 hrs. - compressor skid

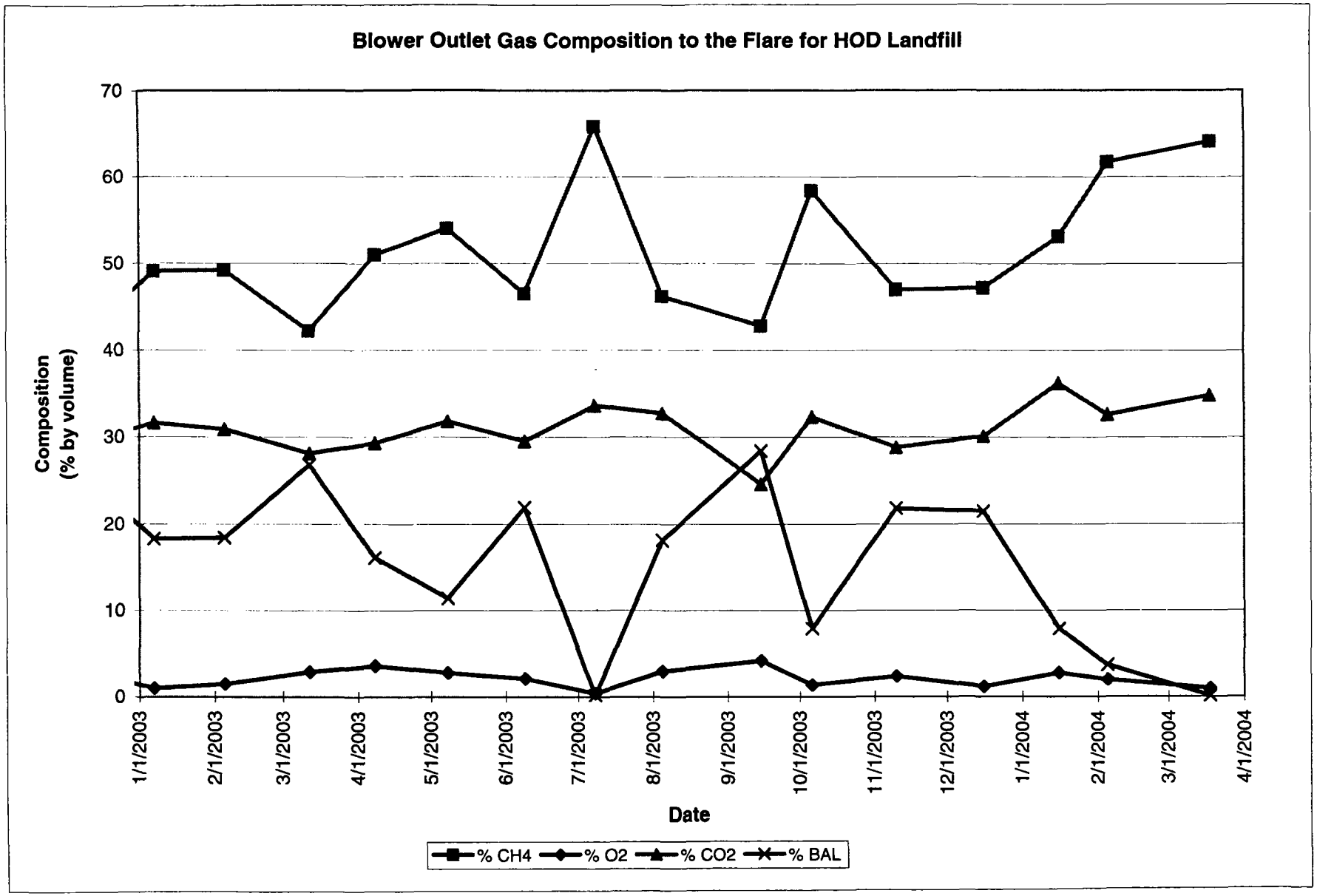
-30" Vac to well field

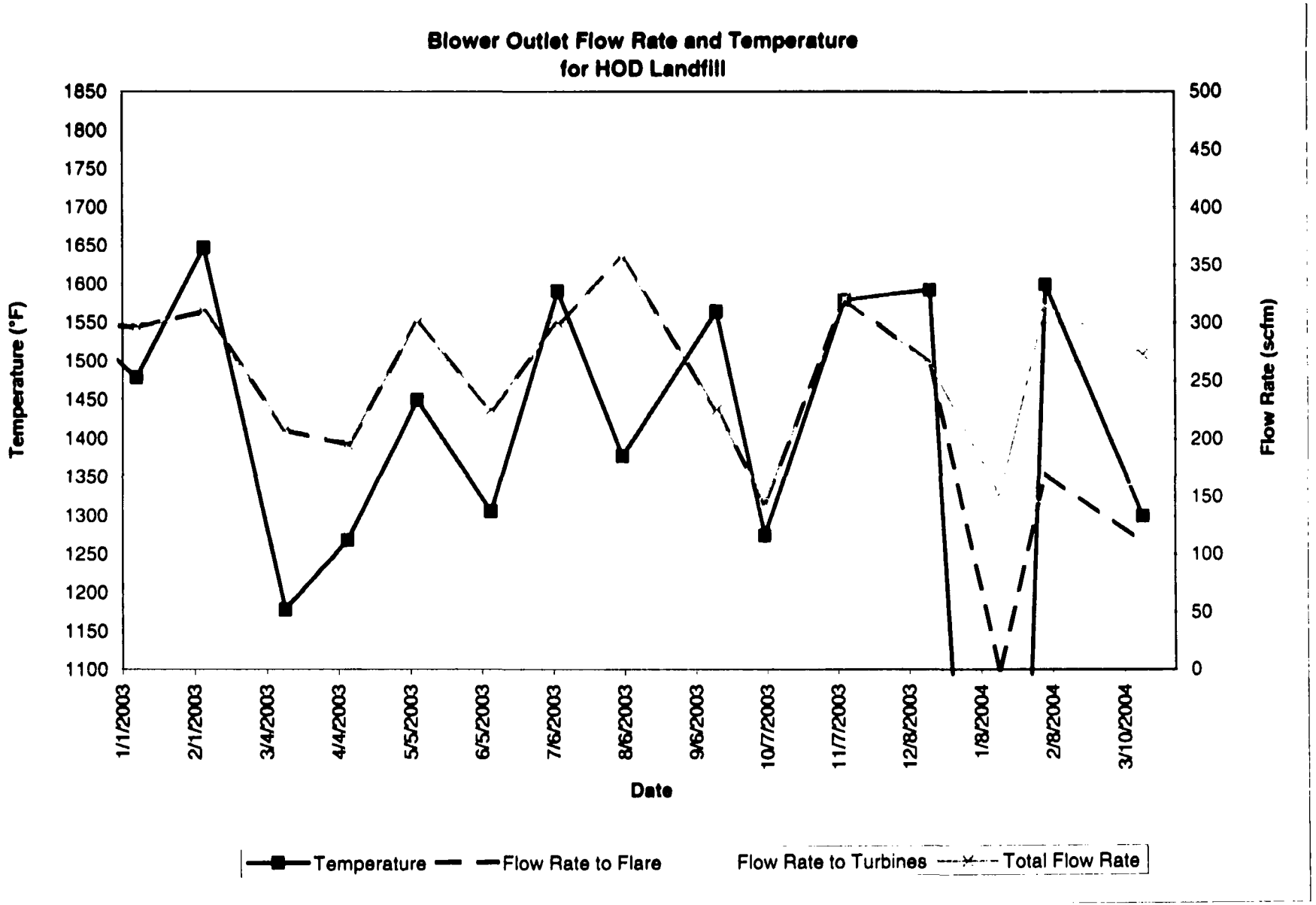
Far corner well field: -28" vac

- Checked carbon vessels: ~1/4 gal H_2O in each
- Checked turbines again - OK
- Checked flowmeter to turbines for plugged lines - seem OK, settings seem OK. - will contact Dave Boundy.
- Left site ~ 1245

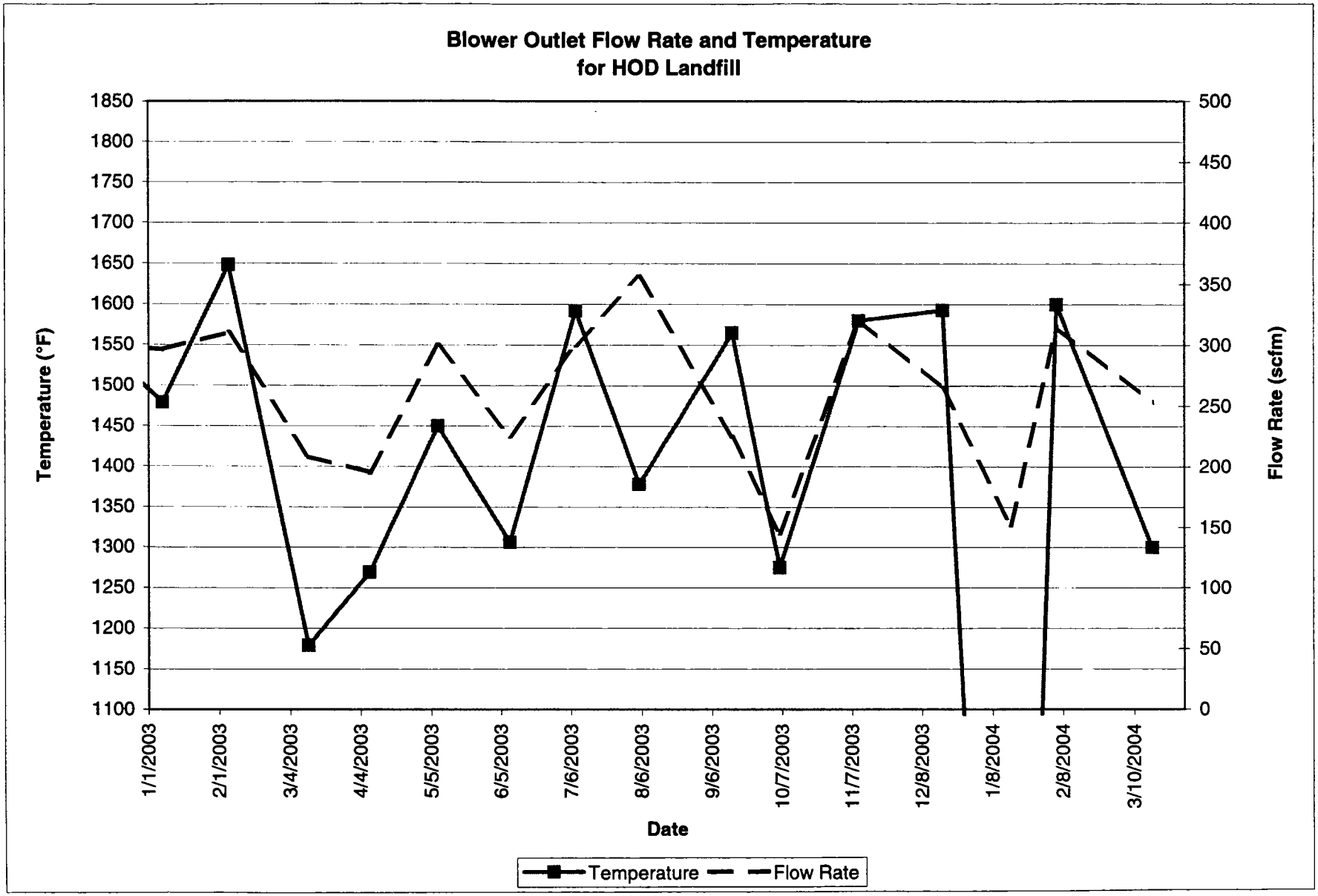
Appendix C
Landfill Gas System Monitoring Data

Flare

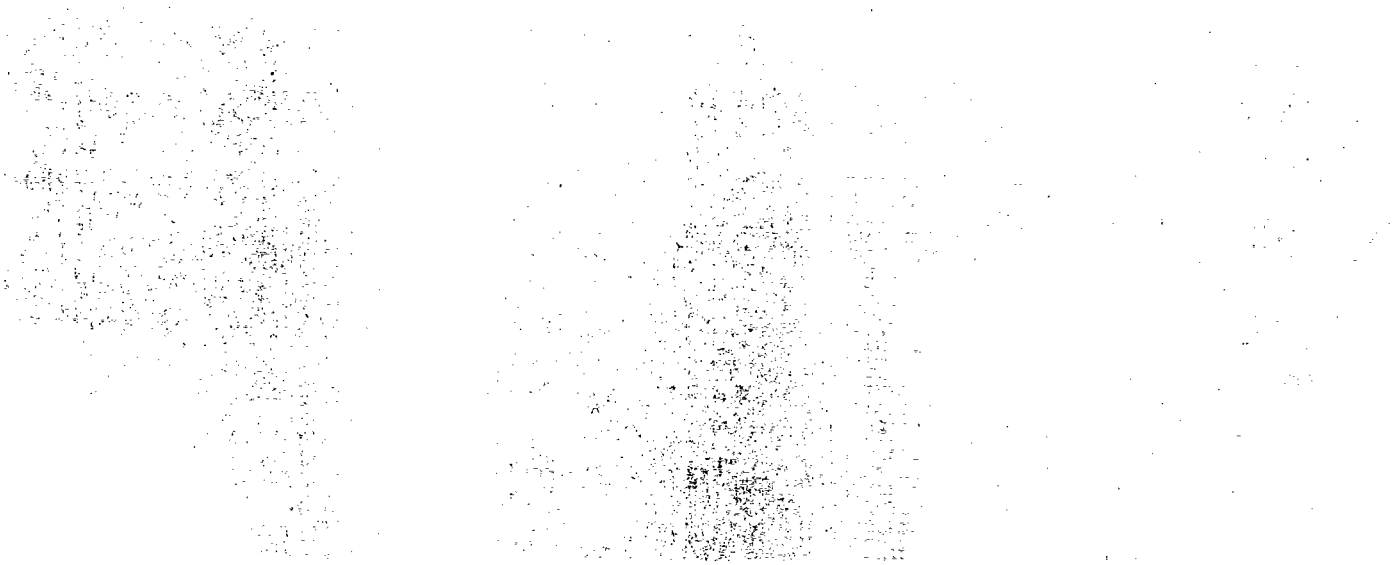

Blower Outlet Gas Composition to the Flare for HOD Landfill
Composition (% by volume)
70
60
50
40
30
20
10
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL

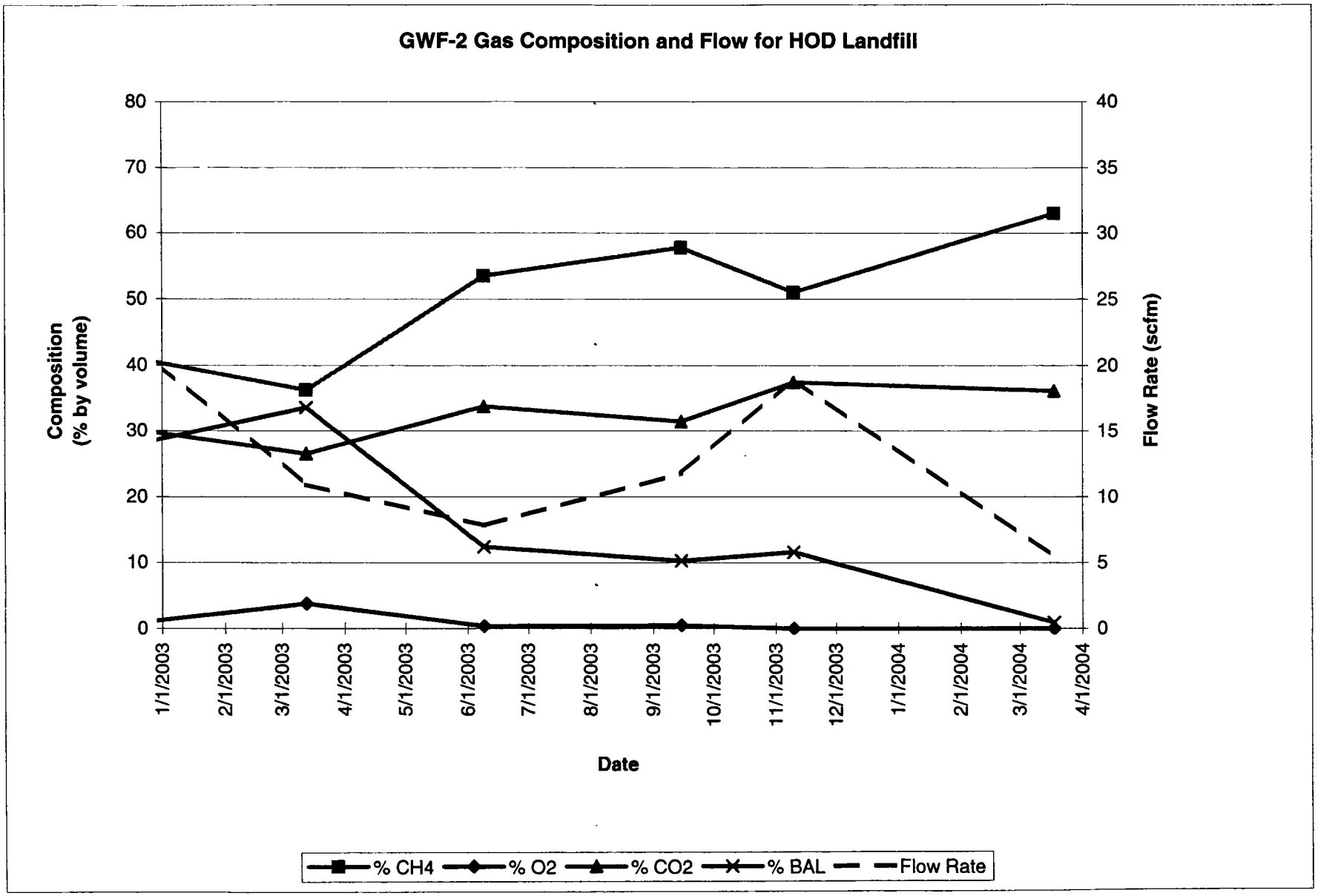

Blower Outlet Flow Rate and Temperature
for HOD Landfill
Temperature (°F)
Flow Rate (scfm)
Date
1850
1800
1750
1700
1650
1600
1550
1500
1450
1400
1350
1300
1250
1200
1150
1100
500
450
400
350
300
250
200
150
100
50
0
1/1/2003
2/1/2003
3/4/2003
4/4/2003
5/5/2003
6/5/2003
7/6/2003
8/6/2003
9/6/2003
10/7/2003
11/7/2003
12/8/2003
1/8/2004
2/8/2004
3/10/2004
Temperature
Flow Rate to Flare
Flow Rate to Turbines
Total Flow Rate

4

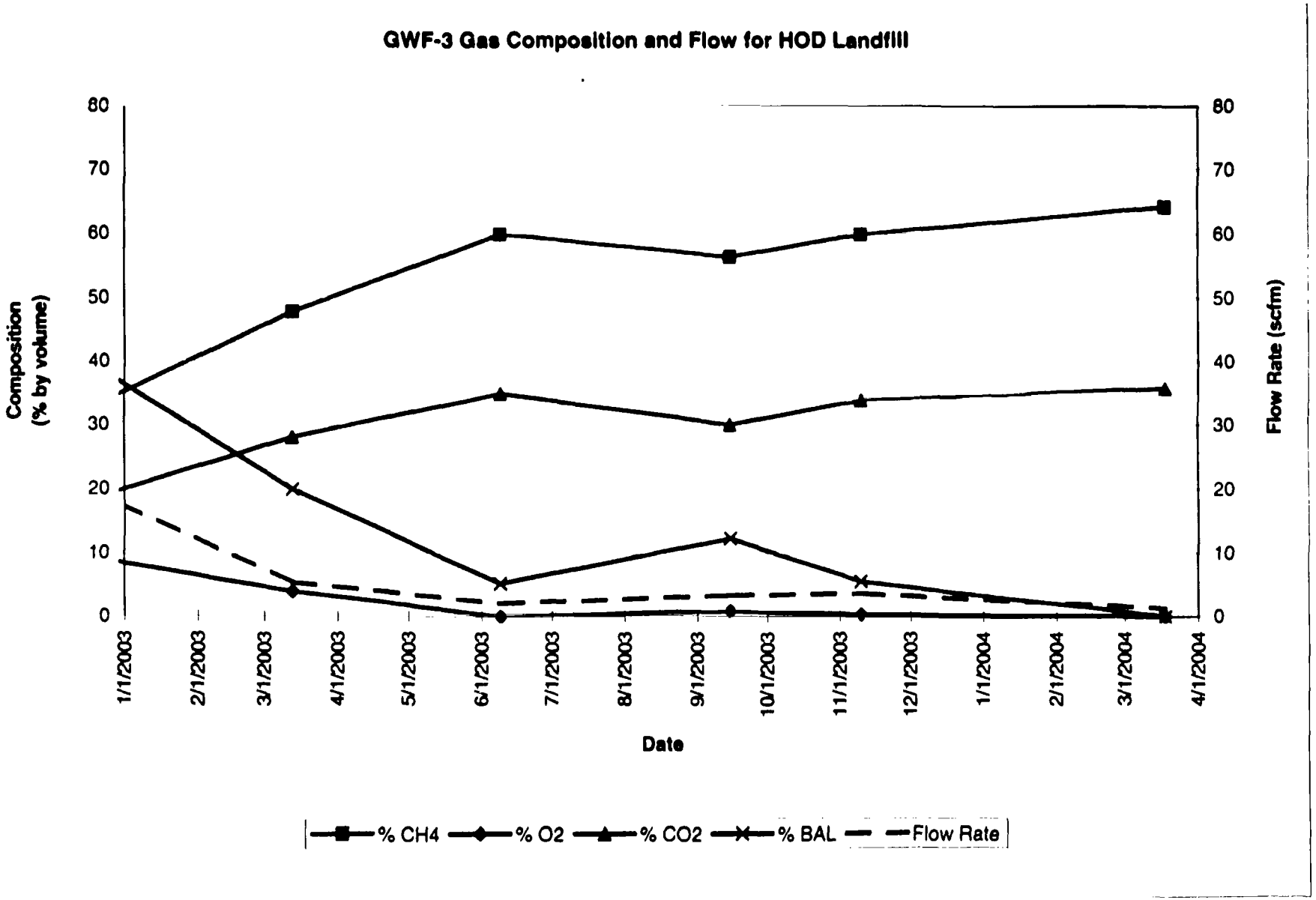

Blower Outlet Flow Rate and Temperature
for HOD Landfill
Temperature (°F)
Flow Rate (scfm)
1850
1800
1750
1700
1650
1600
1550
1500
1450
1400
1350
1300
1250
1200
1150
1100
500
450
400
350
300
250
200
150
100
50
0
1/1/2003
2/1/2003
3/4/2003
4/4/2003
5/5/2003
6/5/2003
7/6/2003
8/6/2003
9/6/2003
10/7/2003
11/7/2003
12/8/2003
1/8/2004
2/8/2004
3/10/2004
Date
Temperature
Flow Rate

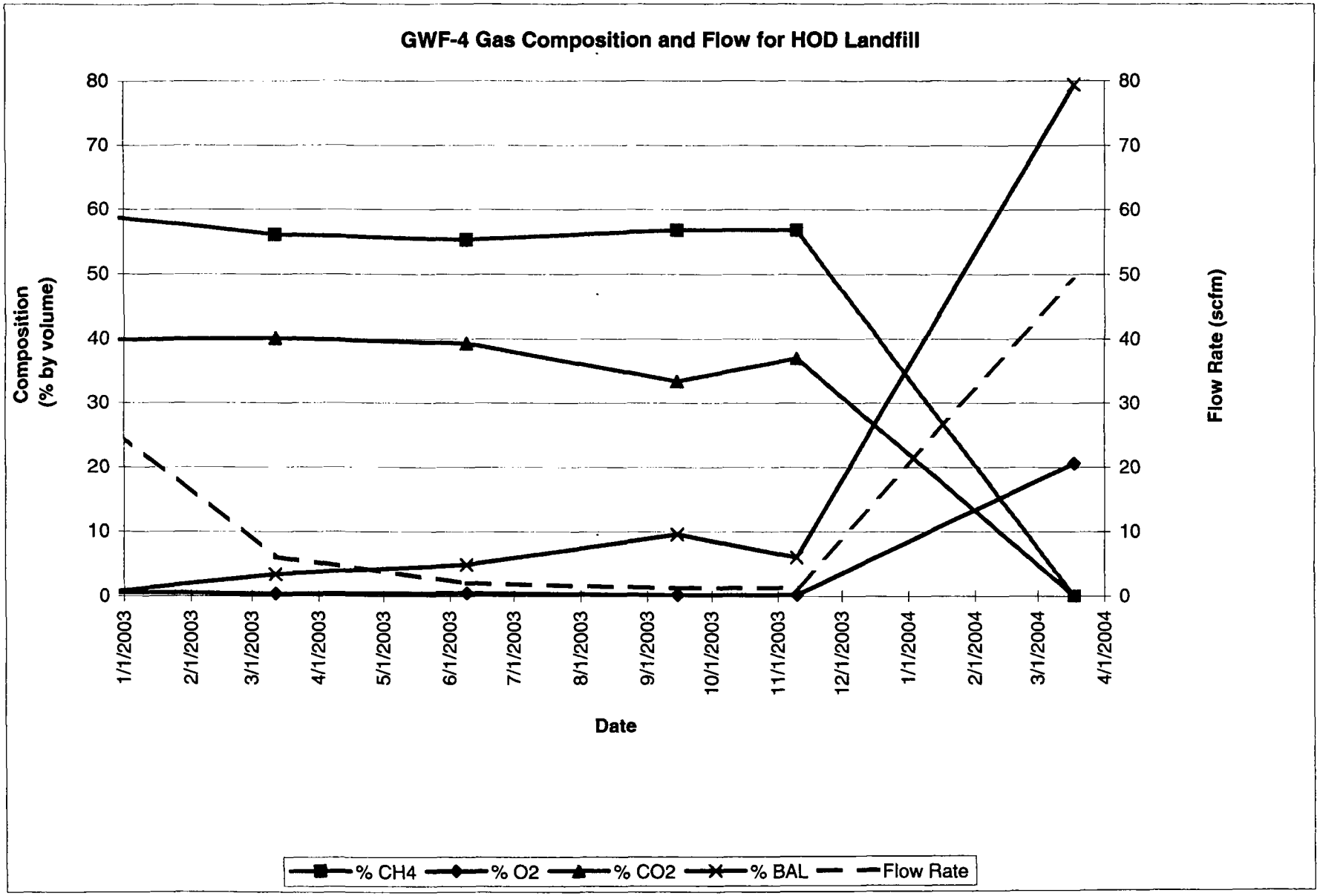
Gas Extraction Wells



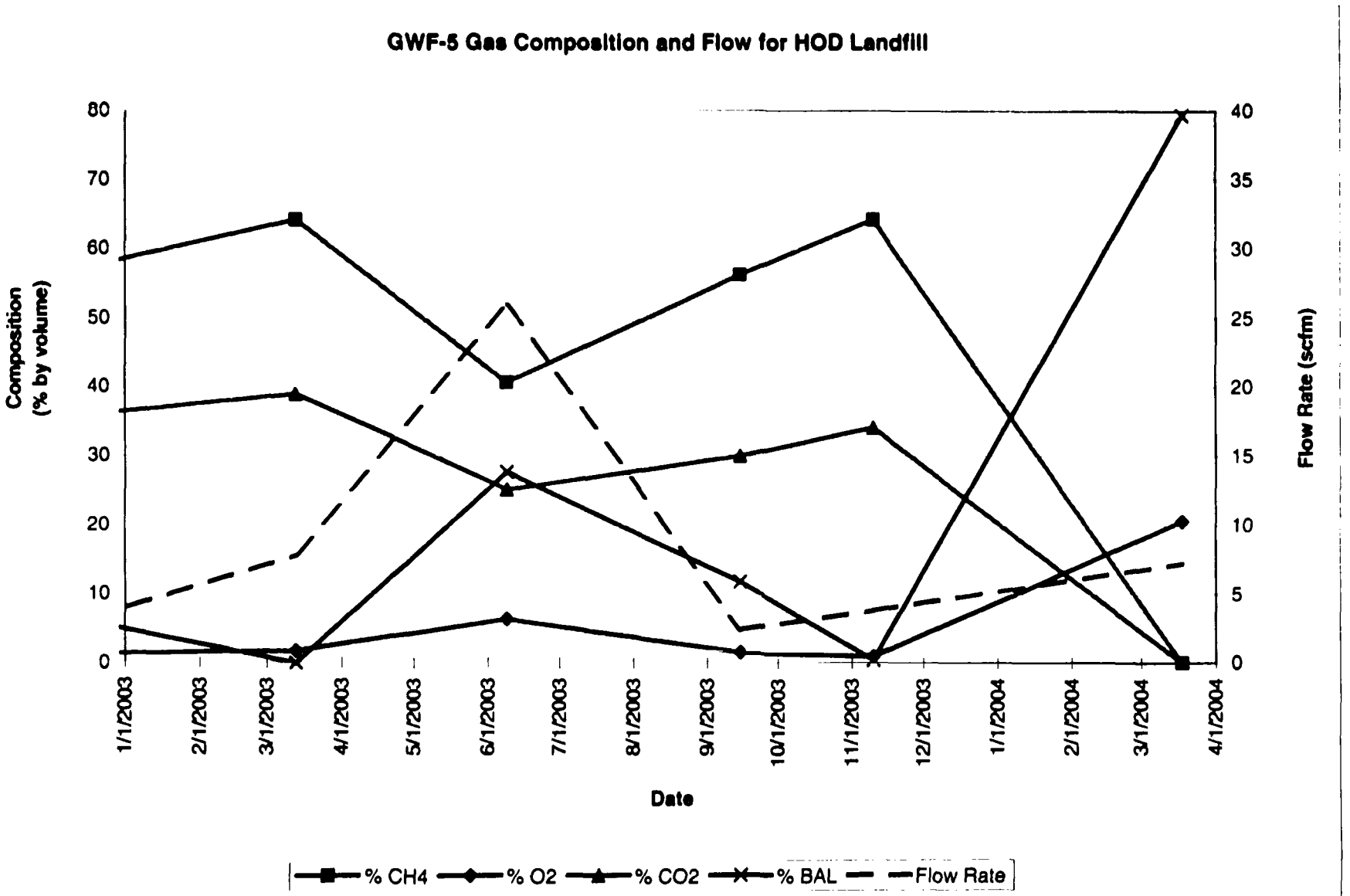

GWF-2 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate

b

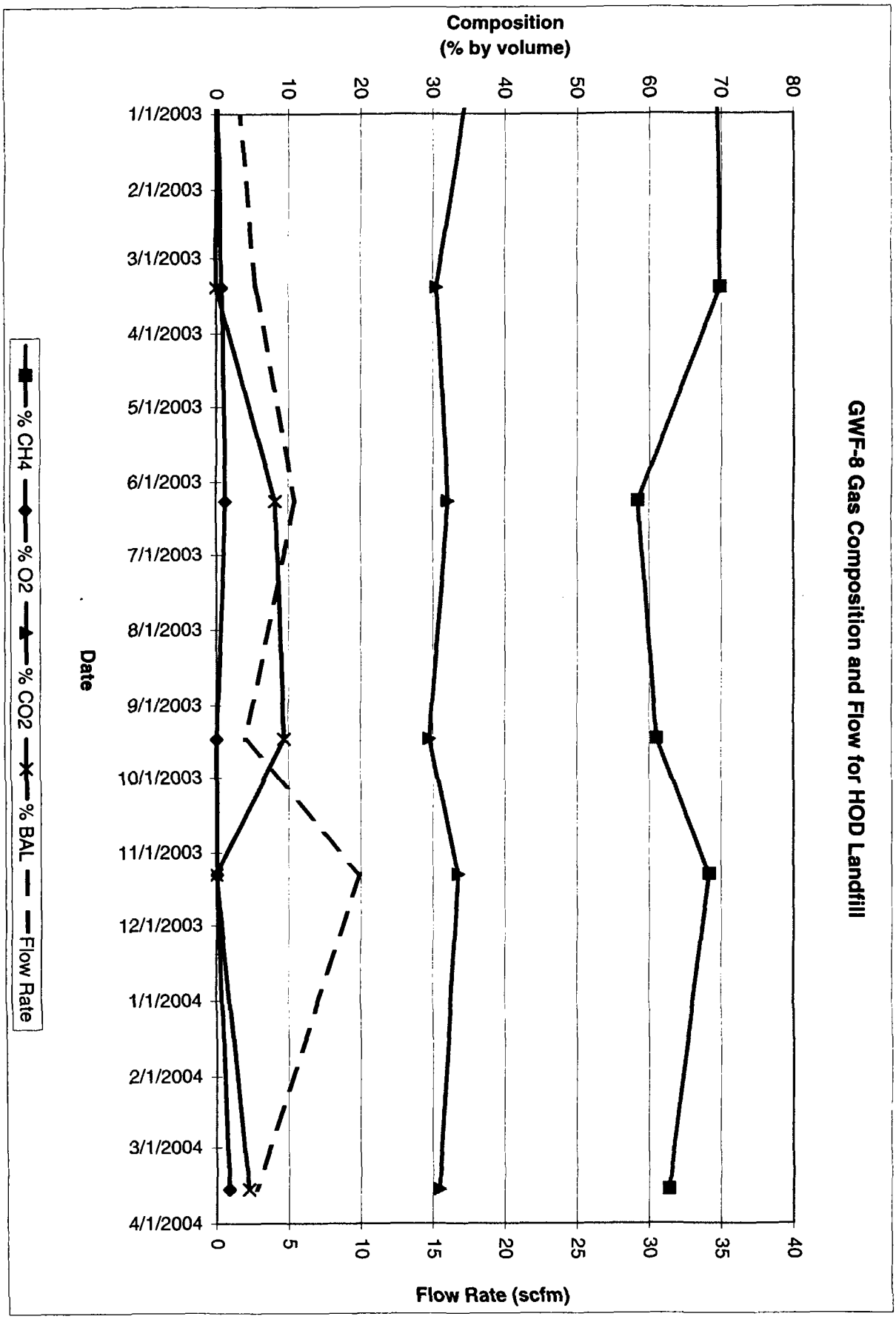

GWF-3 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
0
10
20
30
40
50
60
70
80
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate

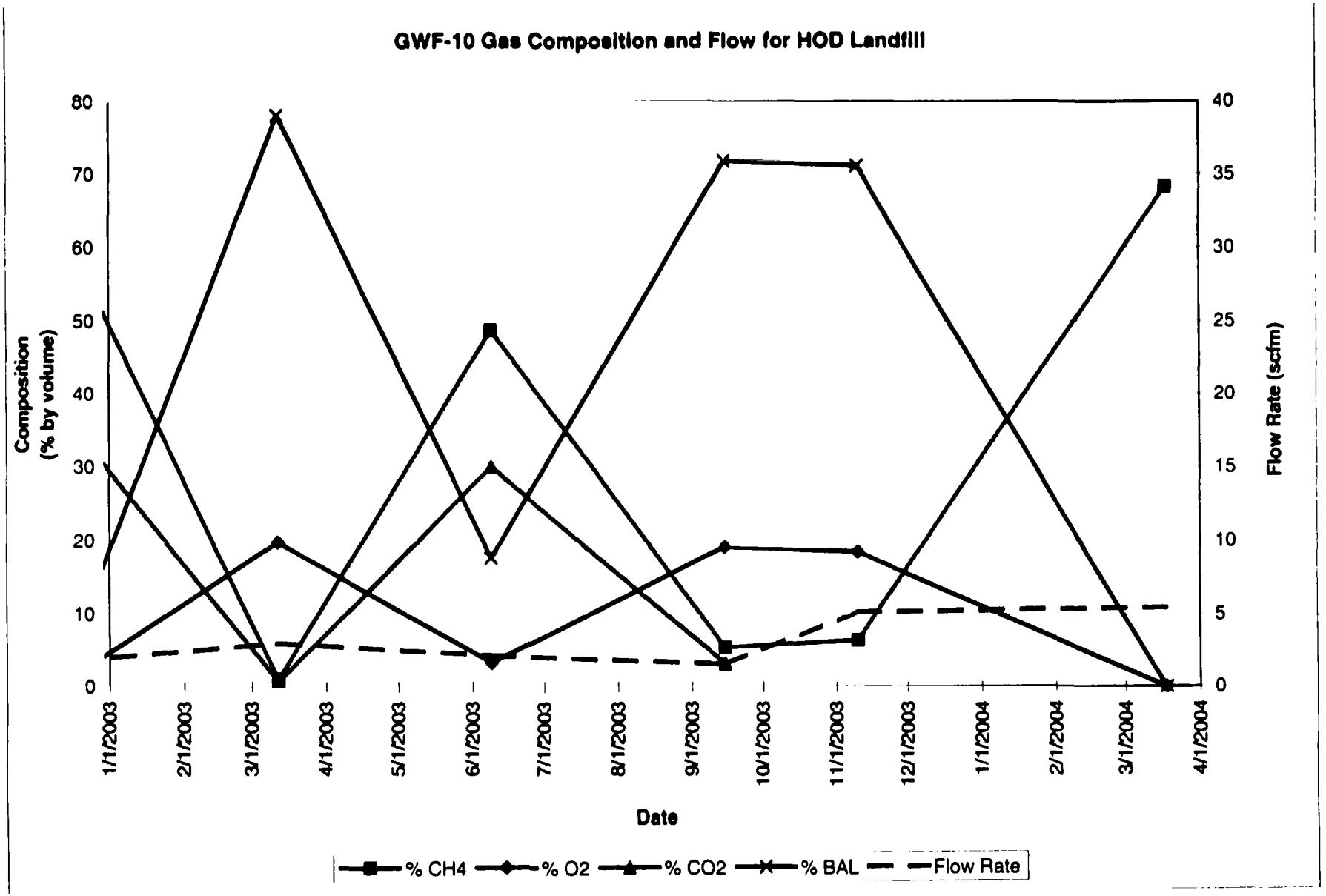


Note: Flow rate was not recorded during the September and November recording event due to a bad sampling port by the orifice plate.

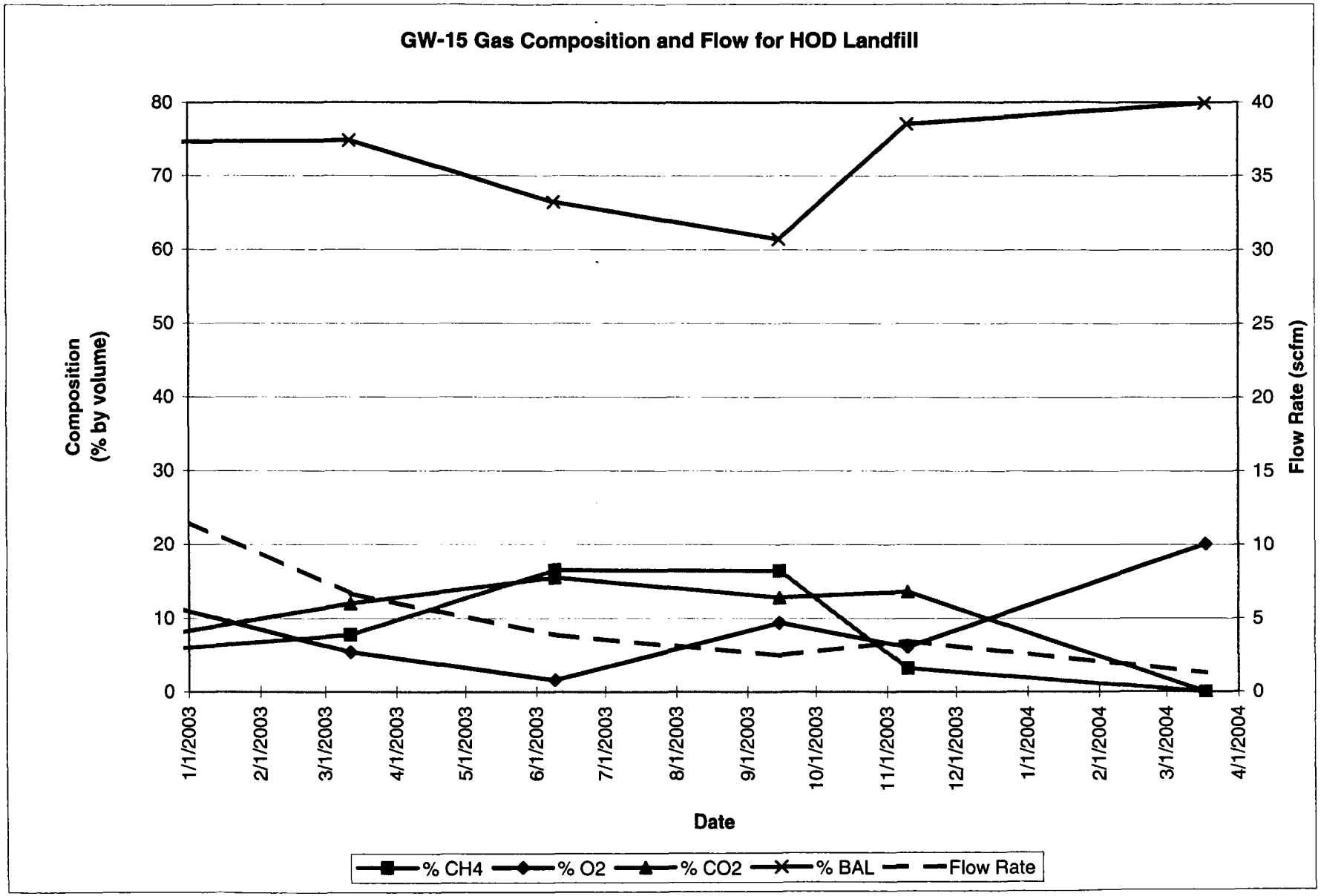

GWF-5 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
0
10
20
30
40
50
60
70
80
0
5
10
15
20
25
30
35
40
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate

12


GWF-8 Gas Composition and Flow for HOD Landfill
Composition
(% by volume)
Flow Rate (scfm)
Date
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate

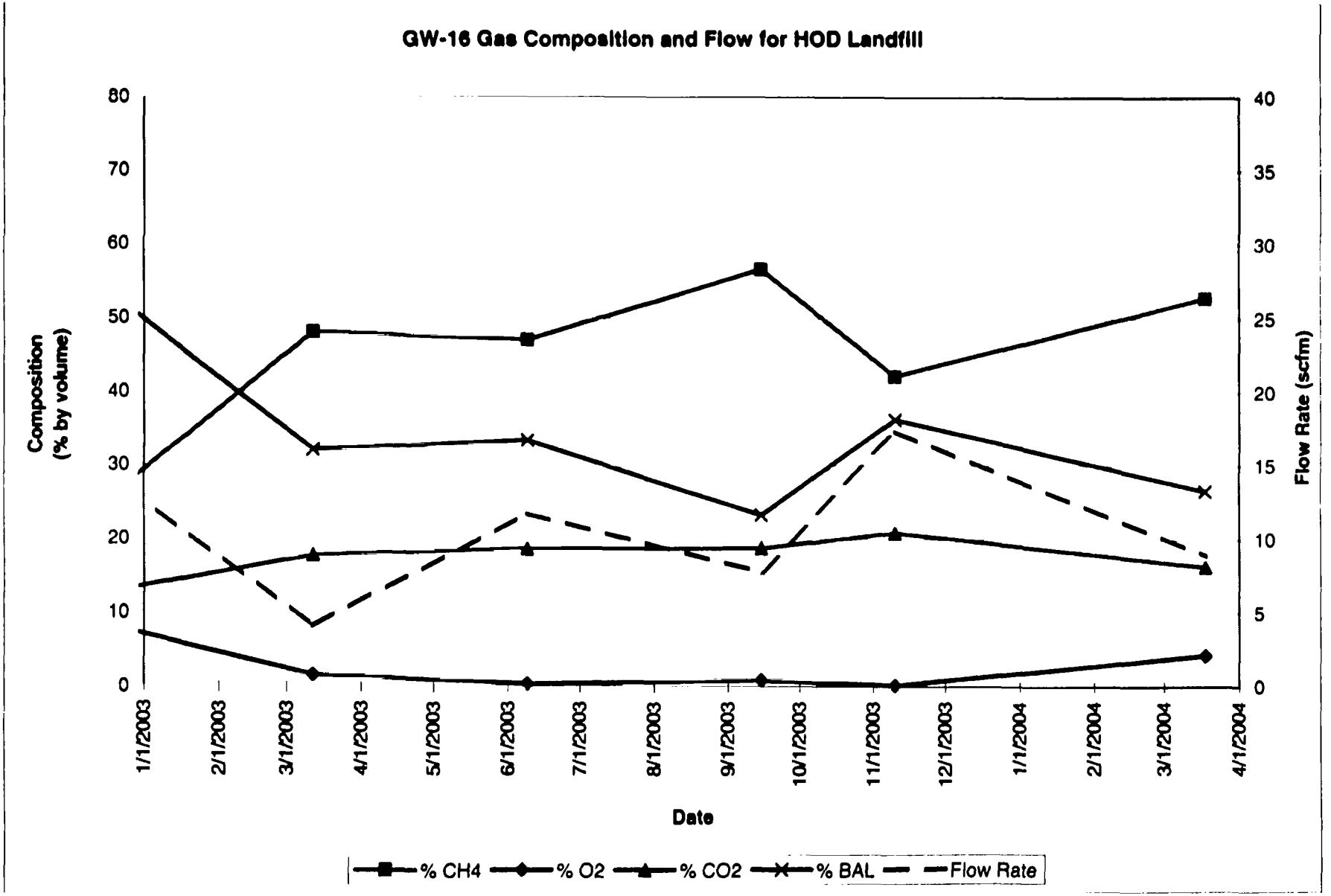

GWF-10 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
0
10
20
30
40
50
60
70
80
0
5
10
15
20
25
30
35
40
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate

14

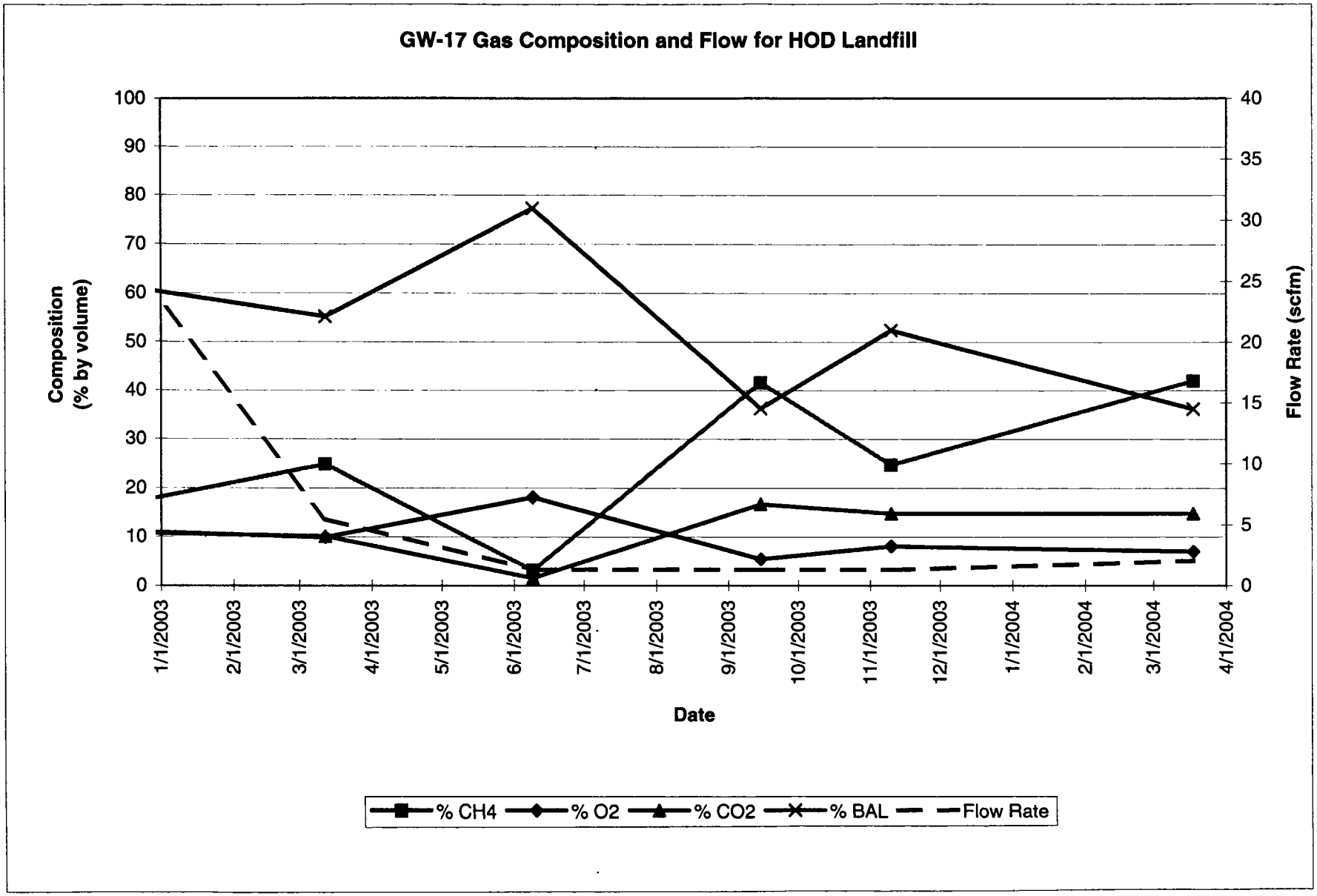


GI

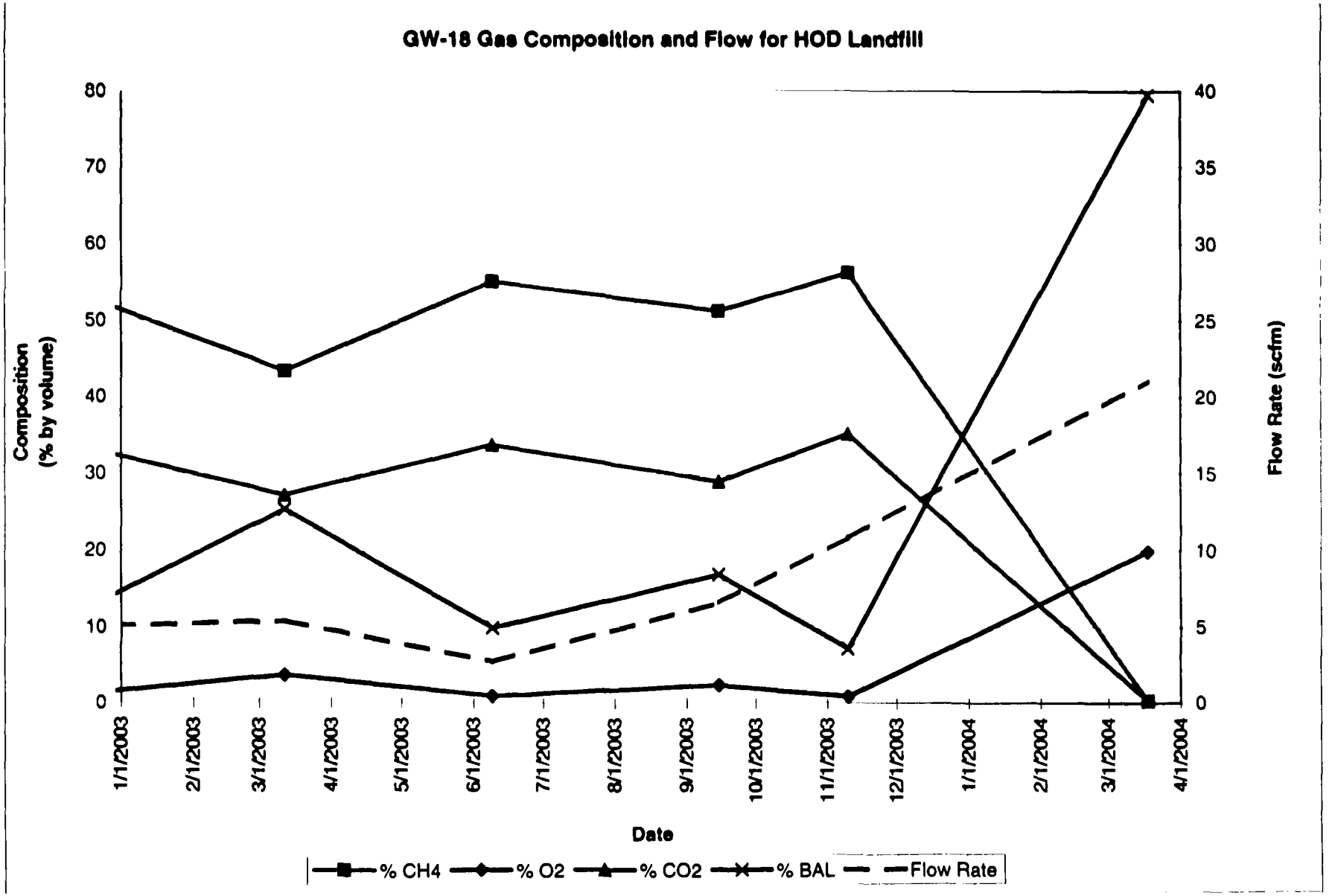
I:\WPMSN\PJT\00-05314\46\000531446-001.XLS 5/19/2004


GW-16 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate

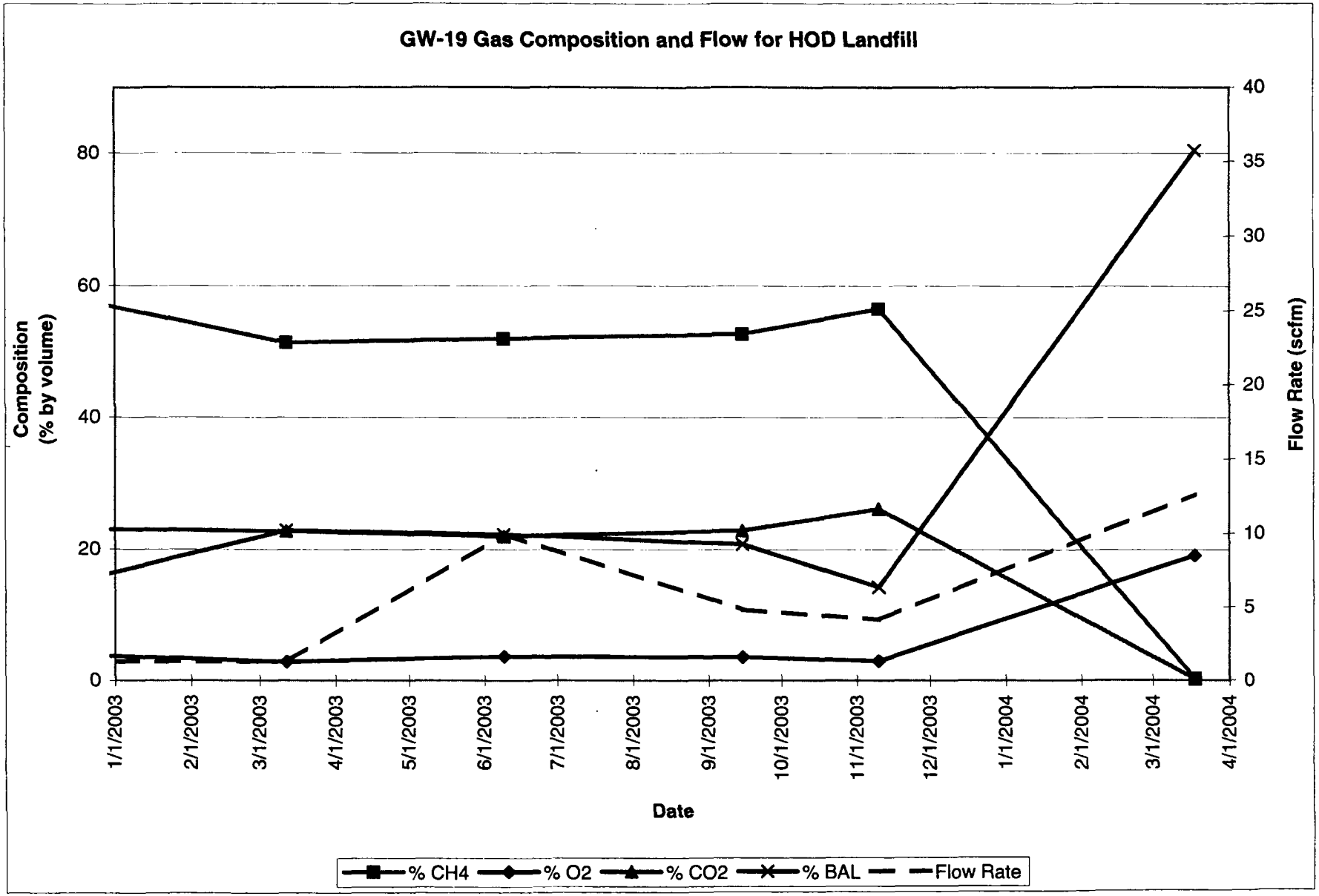
9/



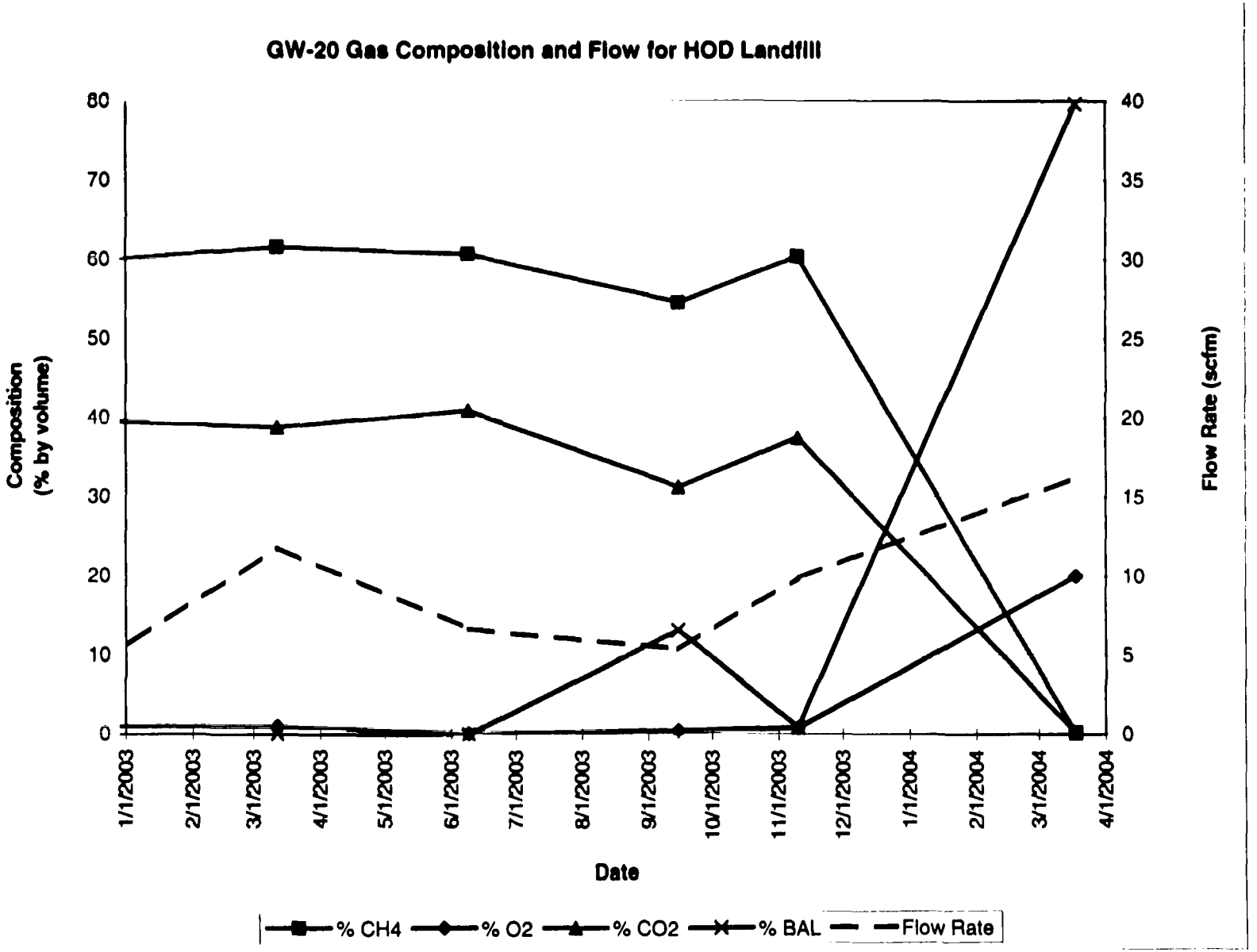
Note: Flow rate was not recorded during the June, September, and November monitoring events due a broken sampling port by the orifice plate. I:\WPMSN\PJT\00-05314\46\000531446-001.XLS 5/19/2004

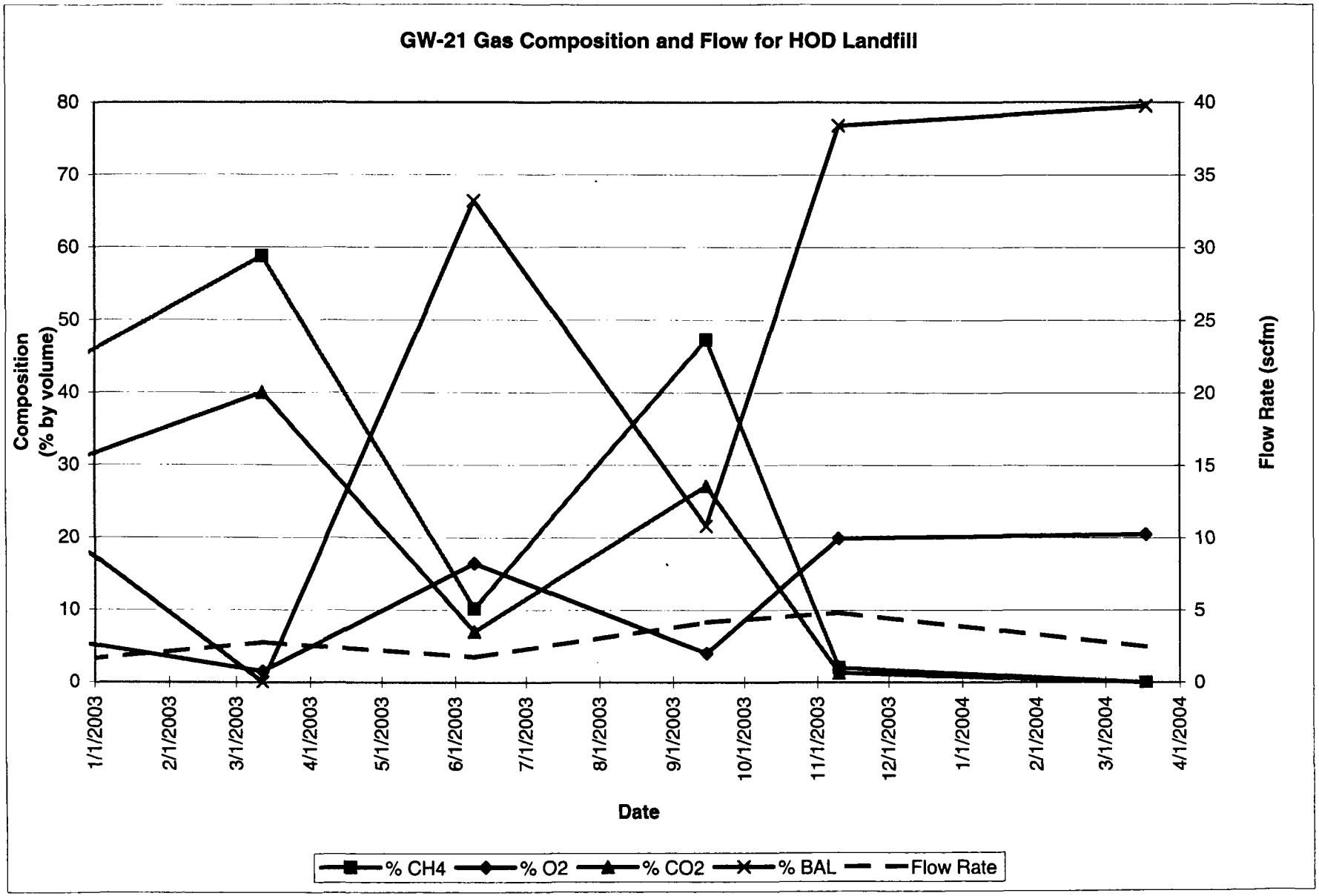

GW-18 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate

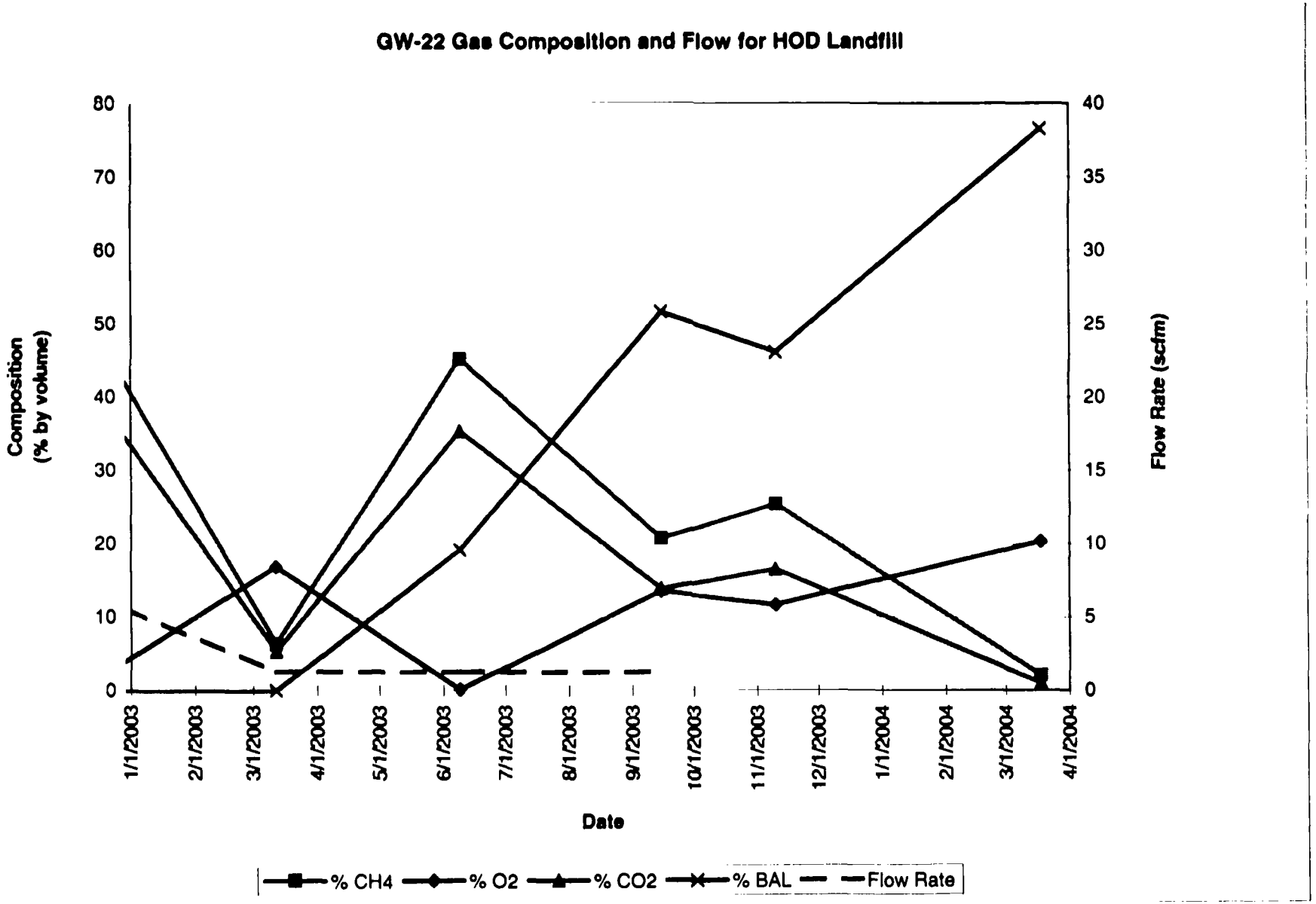
81


GW-19 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
0
20
40
60
80
0
5
10
15
20
25
30
35
40
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate

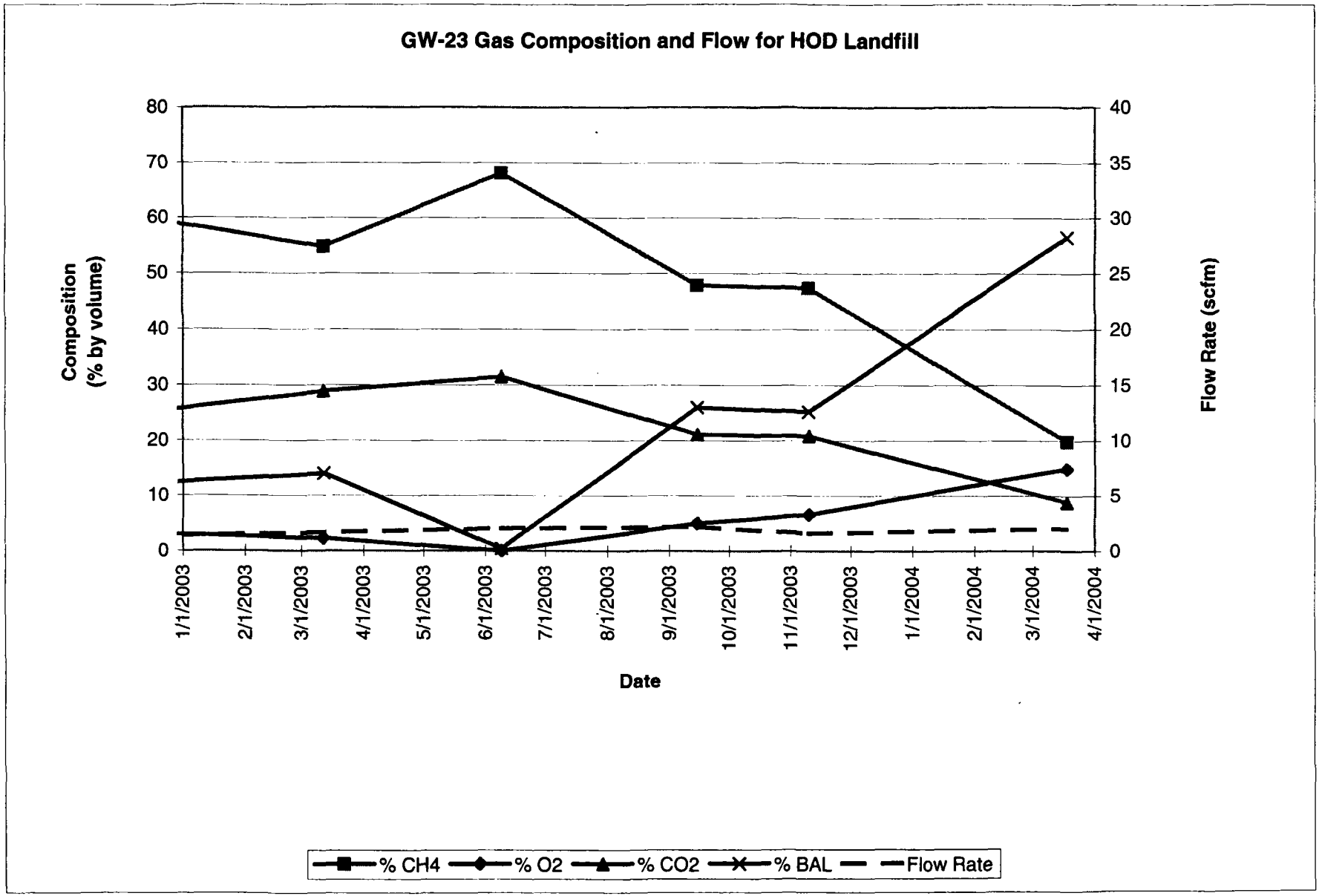
19

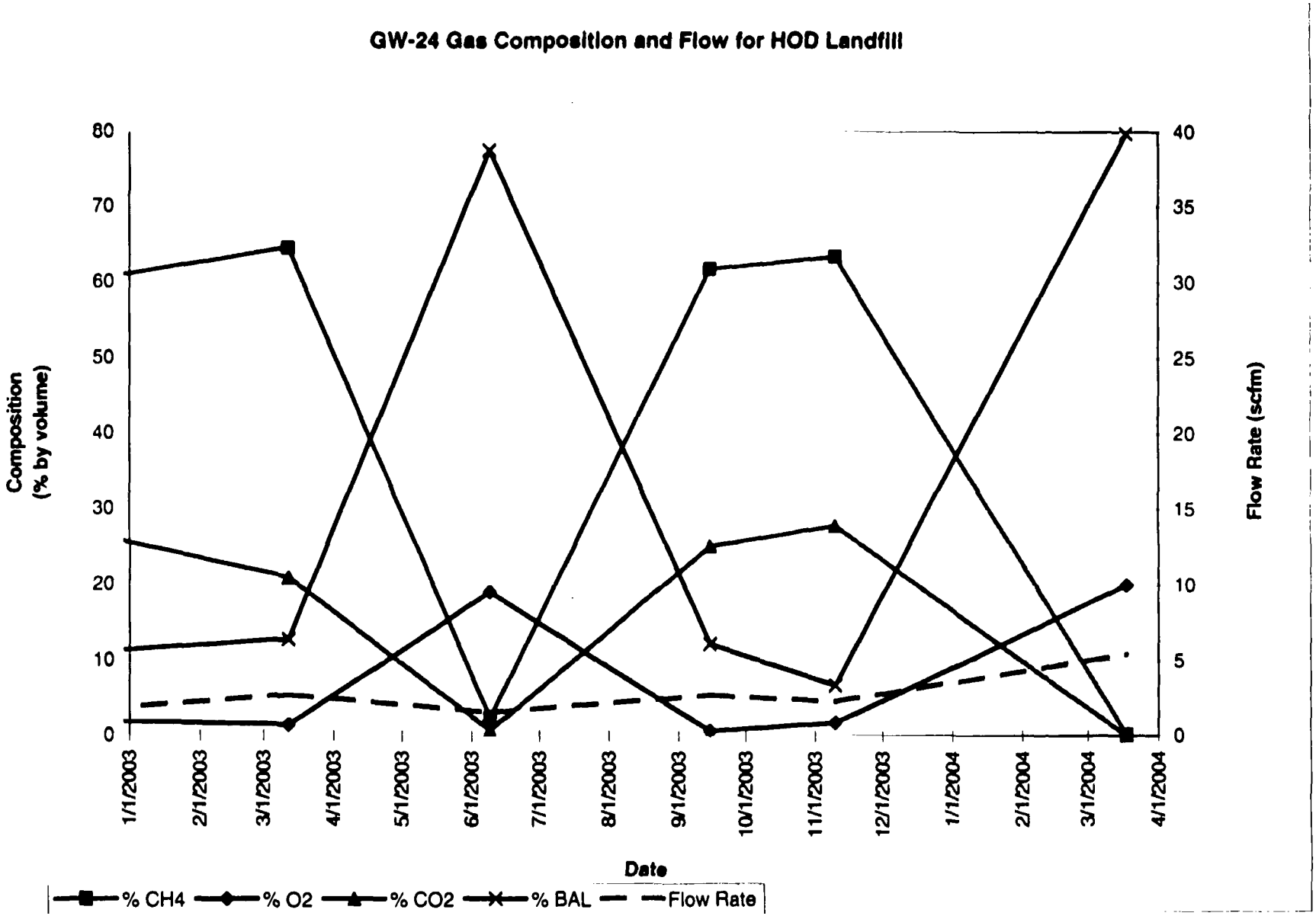

GW-20 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
0
10
20
30
40
50
60
70
80
0
5
10
15
20
25
30
35
40
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate


GW-21 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate

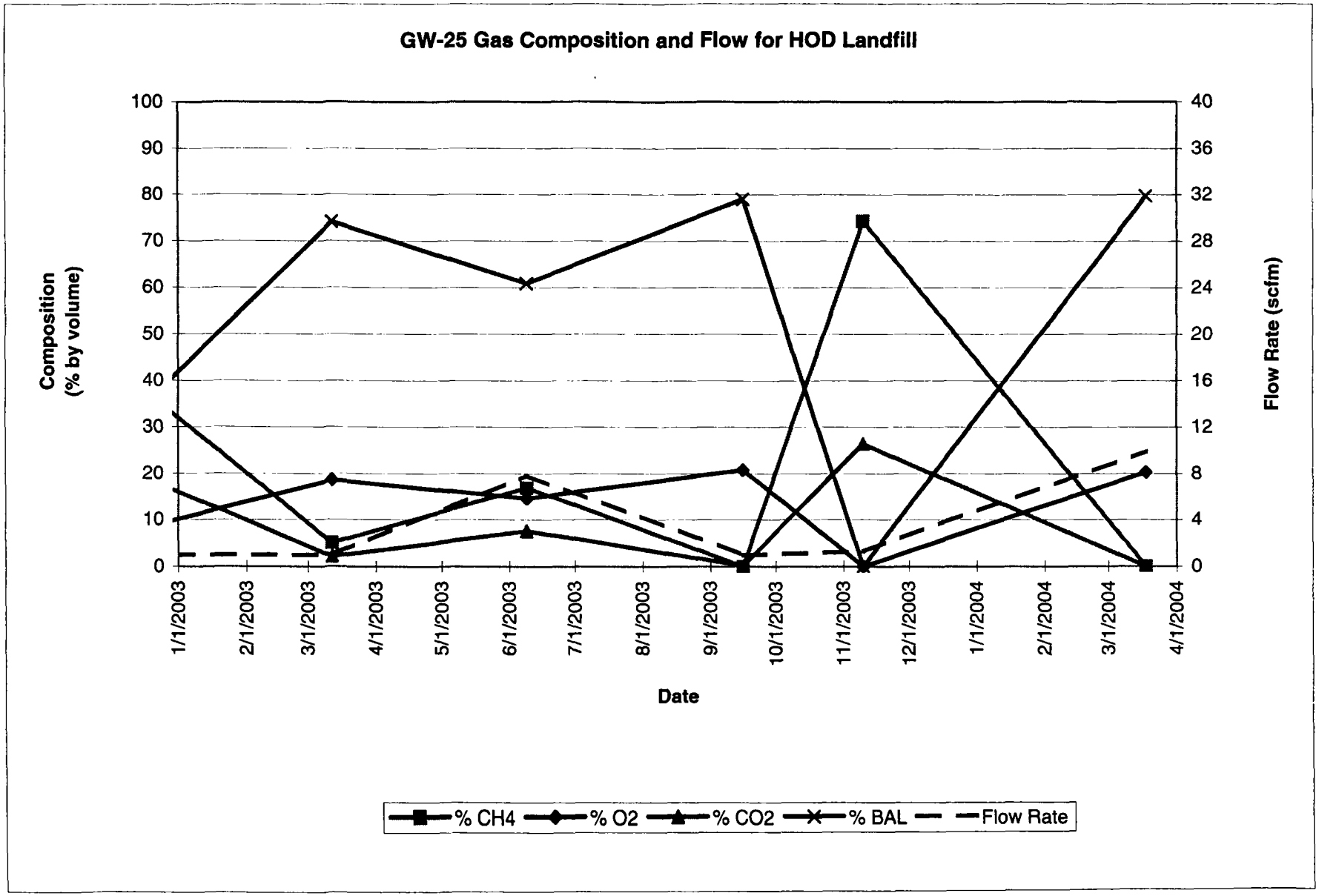


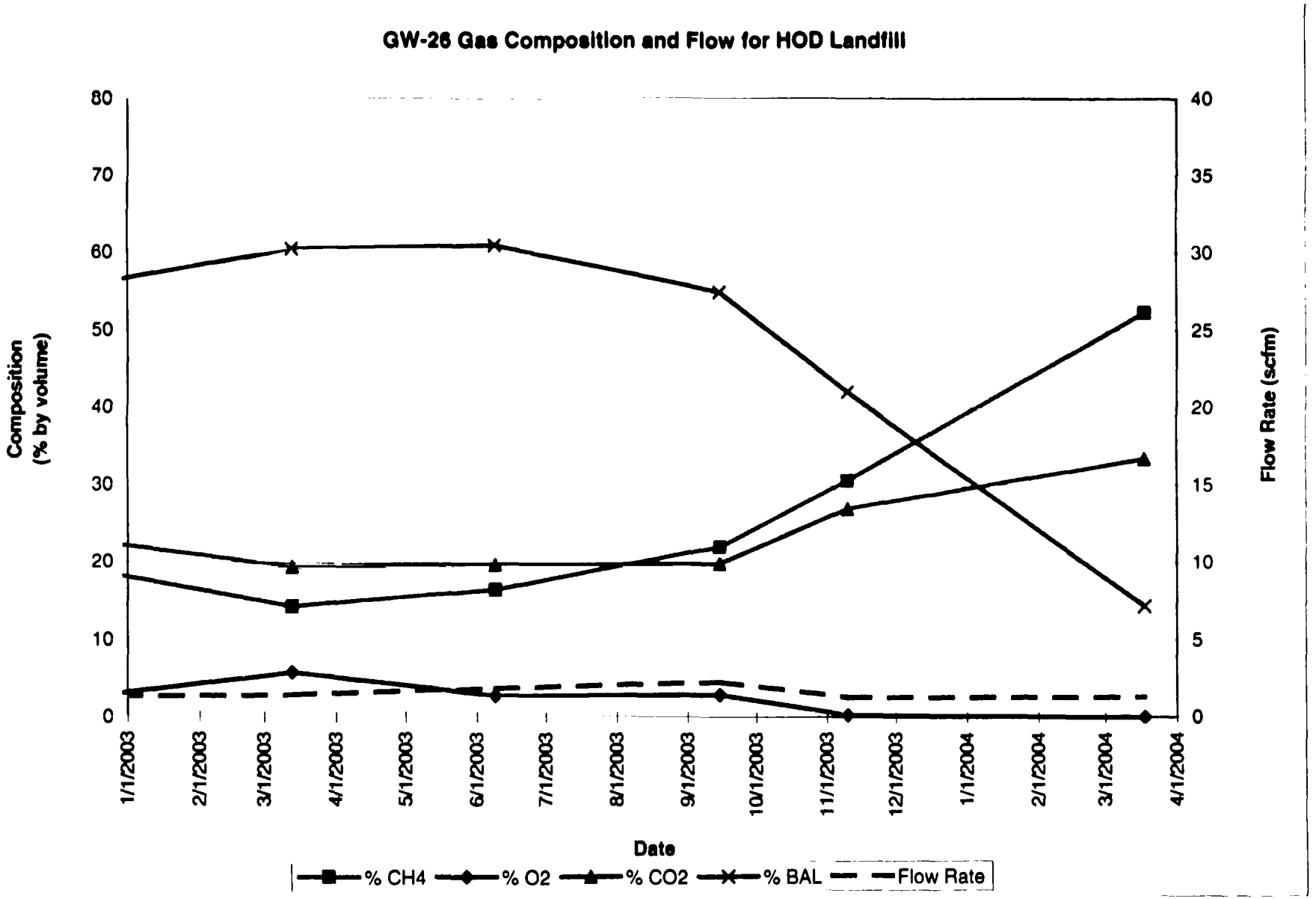
No flow rate recorded during the June, September, and November monitoring periods due to broken sampling ports by the orifice plate.

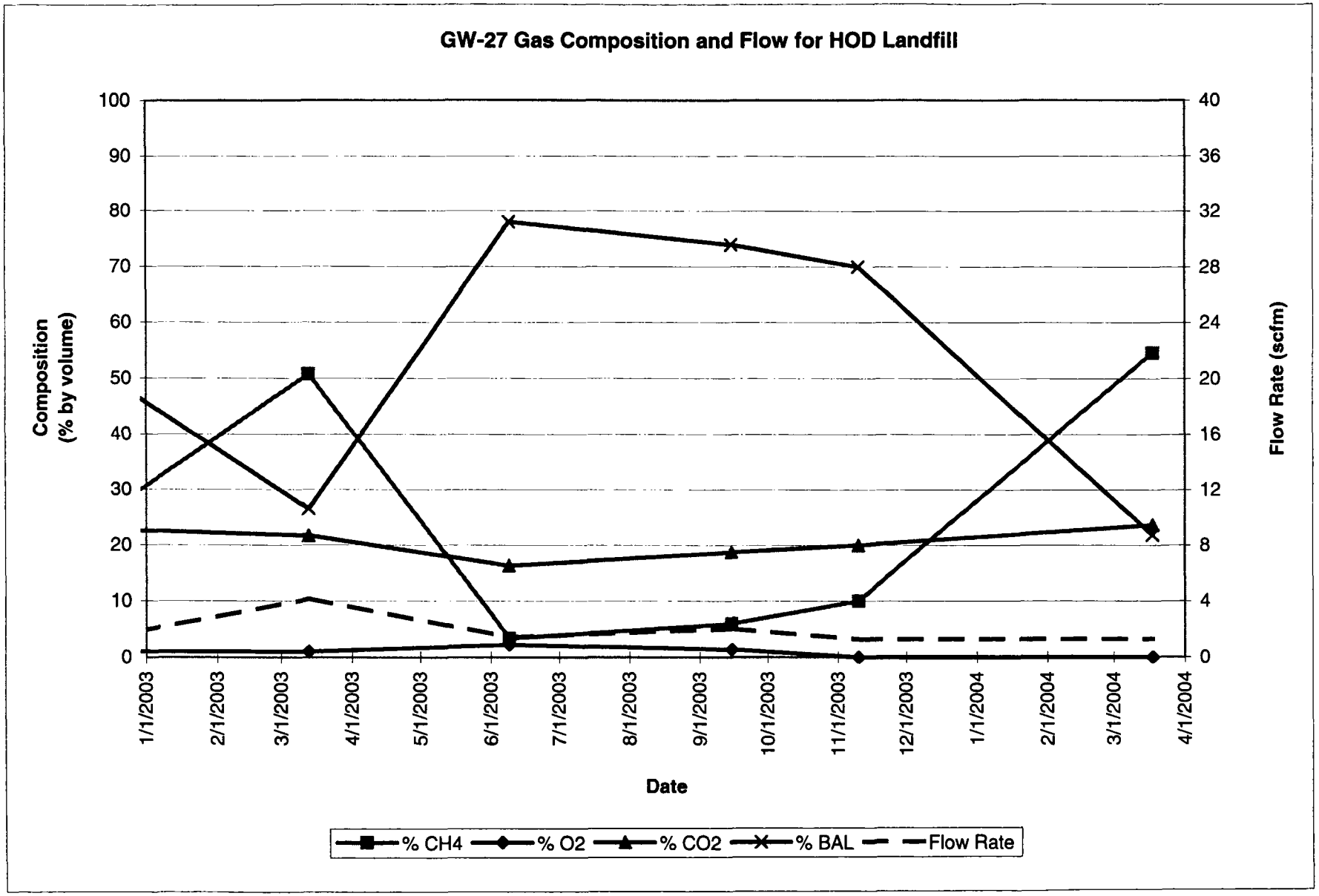

GW-23 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate


GW-24 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
% CH4
% O2
% CO2
% BAL
Flow Rate
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004

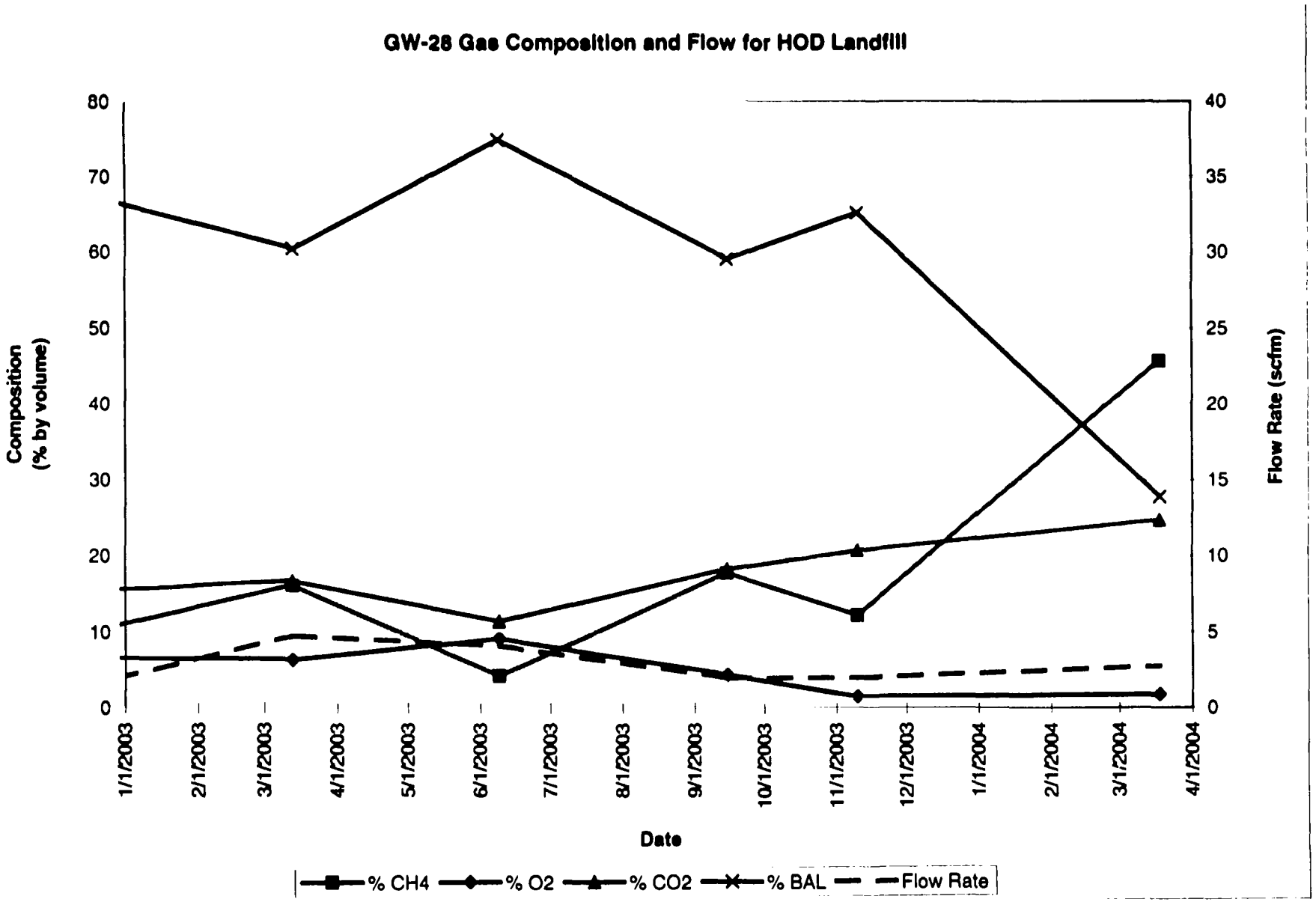
24


GW-25 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
100
90
80
70
60
50
40
30
20
10
0
40
36
32
28
24
20
16
12
8
4
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate

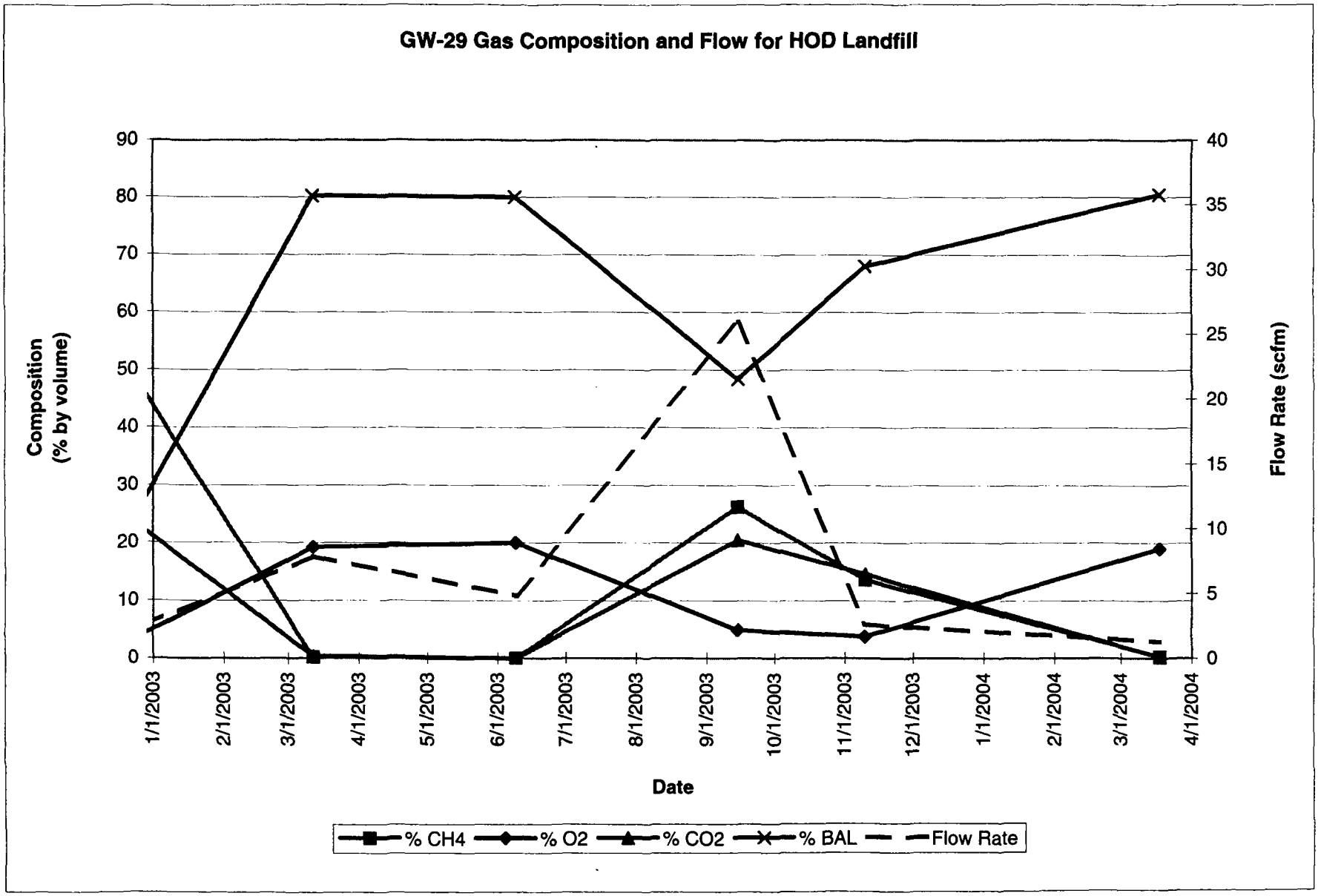

GW-26 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate


GW-27 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
100
90
80
70
60
50
40
30
20
10
0
40
36
32
28
24
20
16
12
8
4
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate

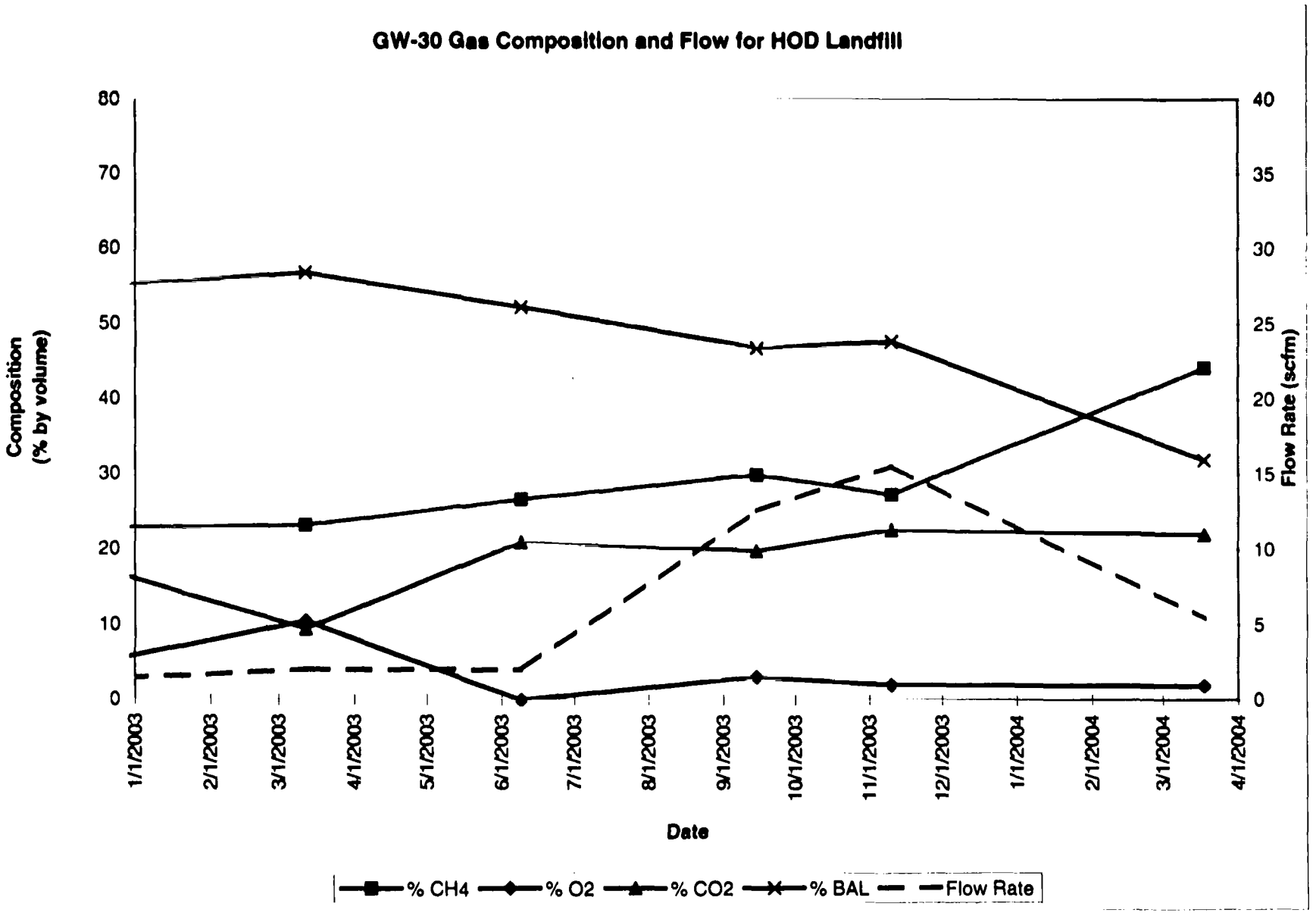
27


GW-28 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
% CH4
% O2
% CO2
% BAL
Flow Rate
0
10
20
30
40
50
60
70
80
0
5
10
15
20
25
30
35
40
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004

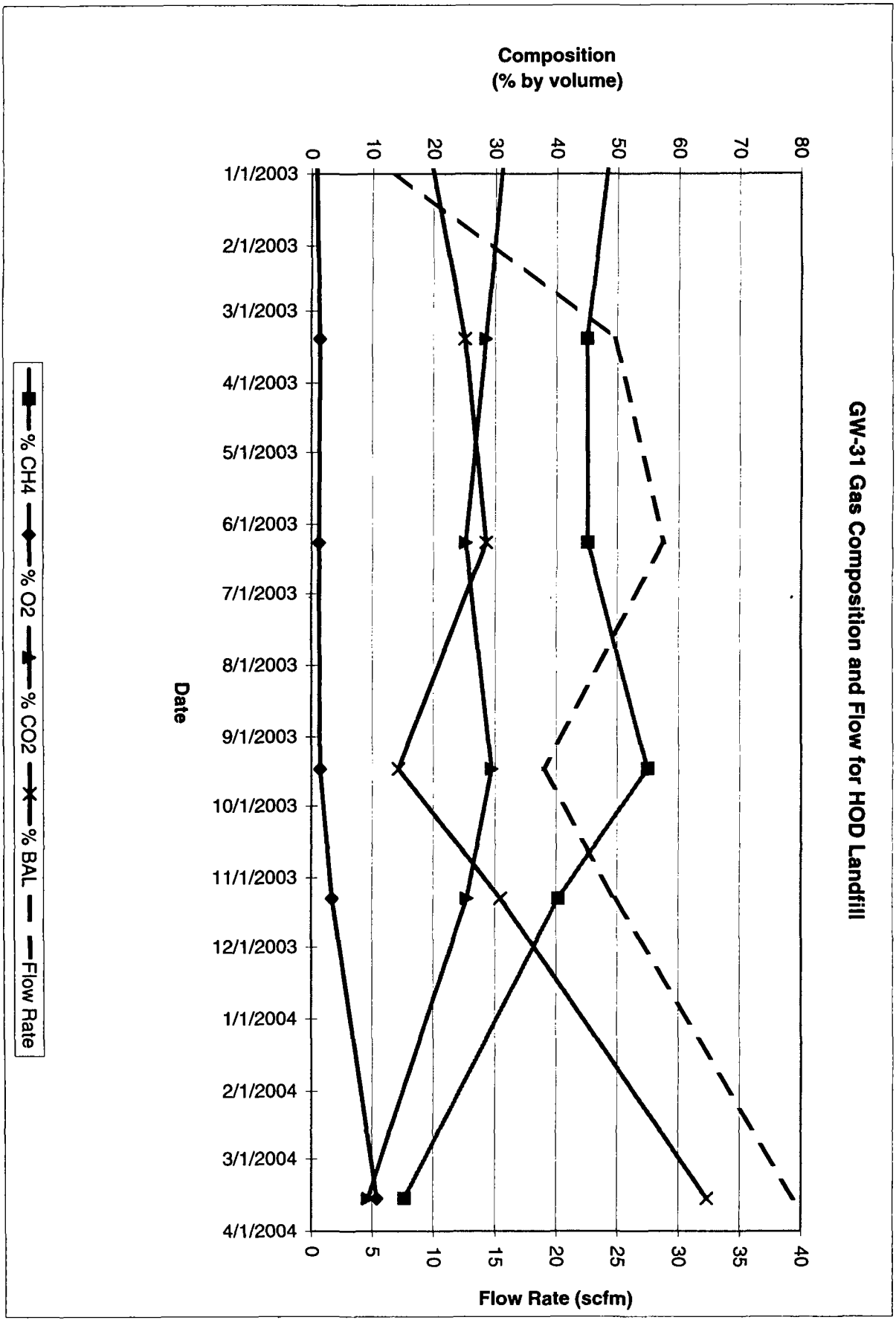
28

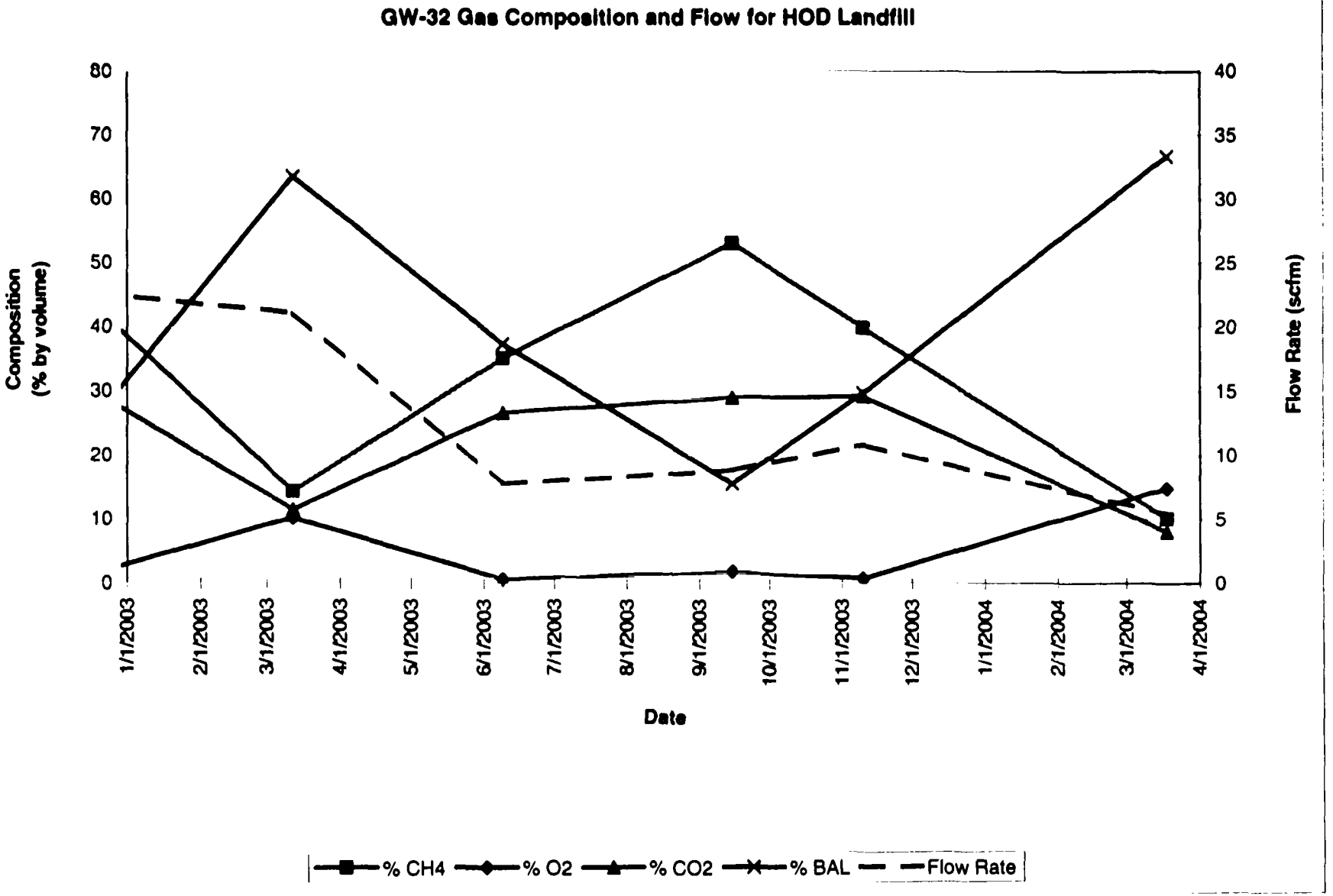

GW-29 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate

29

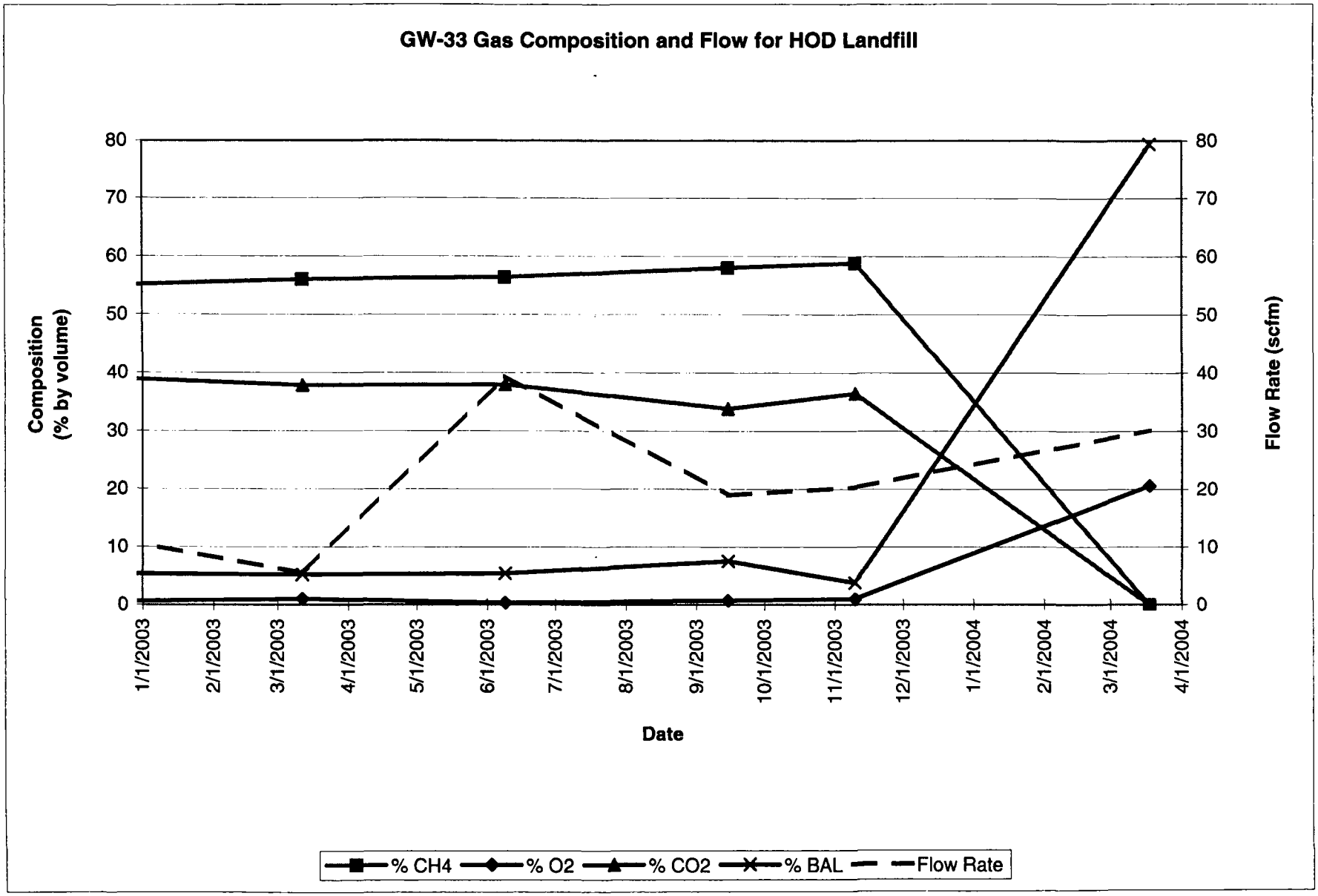

GW-30 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
% CH4
% O2
% CO2
% BAL
Flow Rate

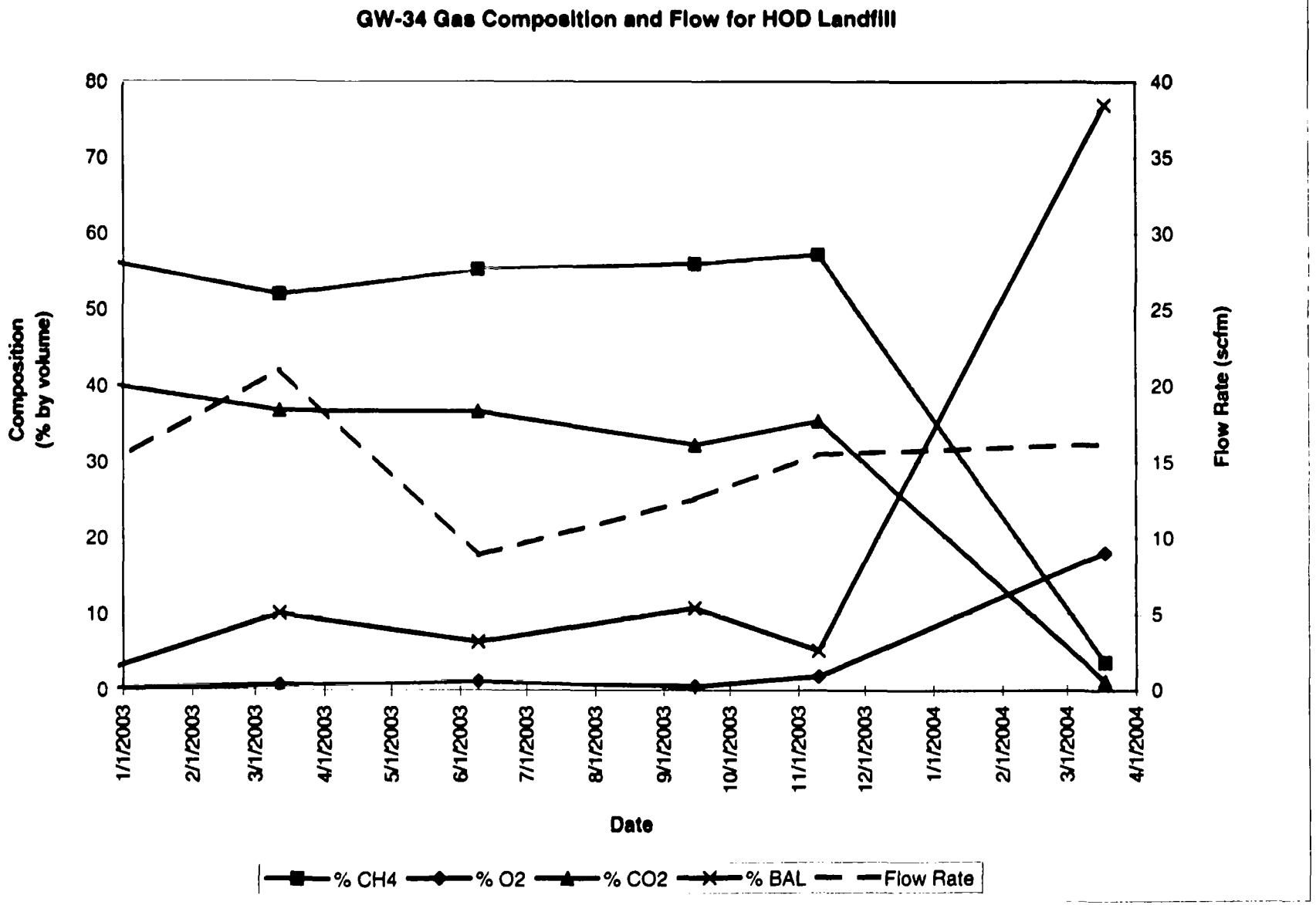
30


GW-31 Gas Composition and Flow for HOD Landfill
Composition
(% by volume)
0
10
20
30
40
50
60
70
80
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
0
5
10
15
20
25
30
35
40
Flow Rate (scfm)
% CH4
% O2
% CO2
% BAL
Flow Rate


GW-32 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate

32


GW-33 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
0
10
20
30
40
50
60
70
80
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate



34

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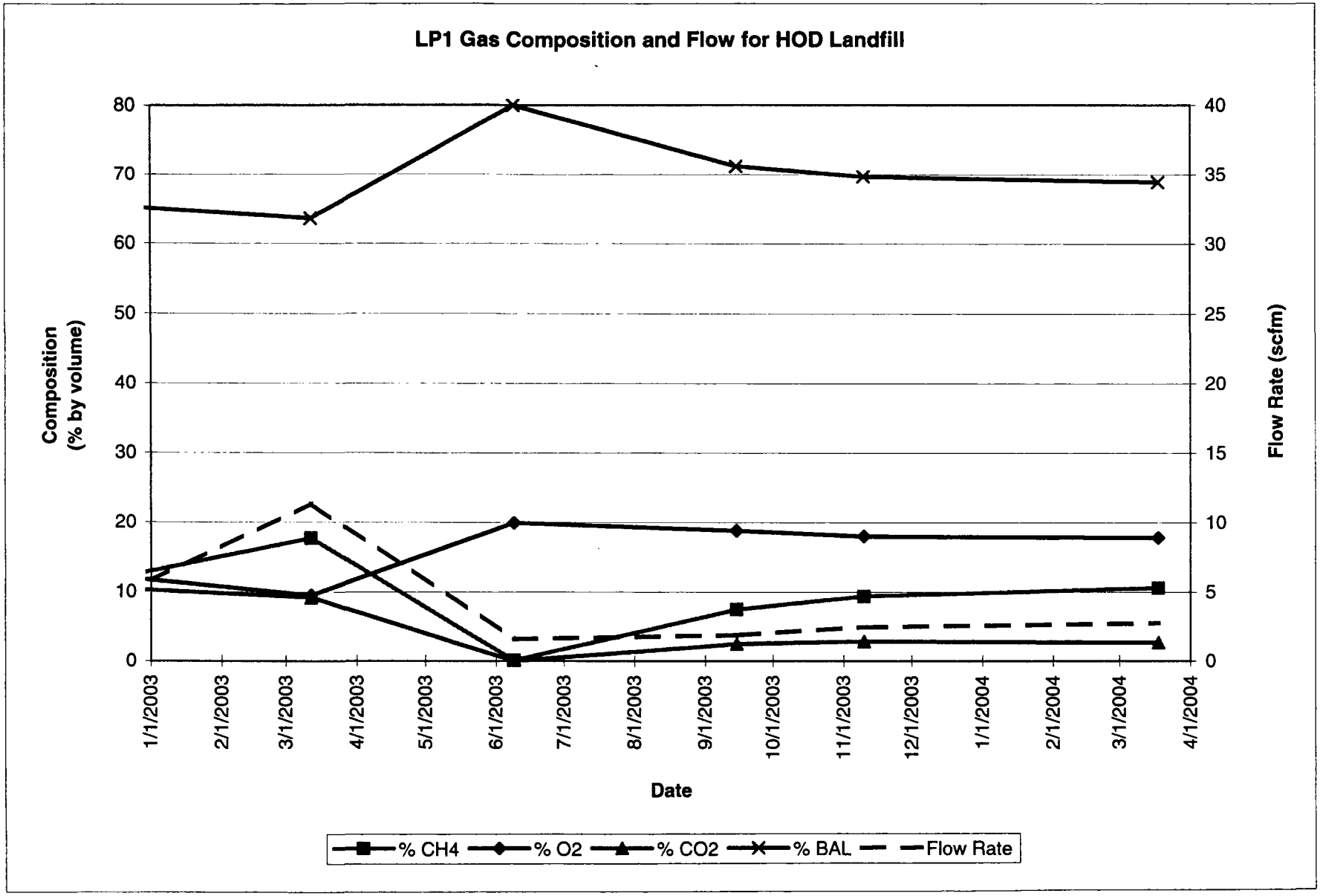
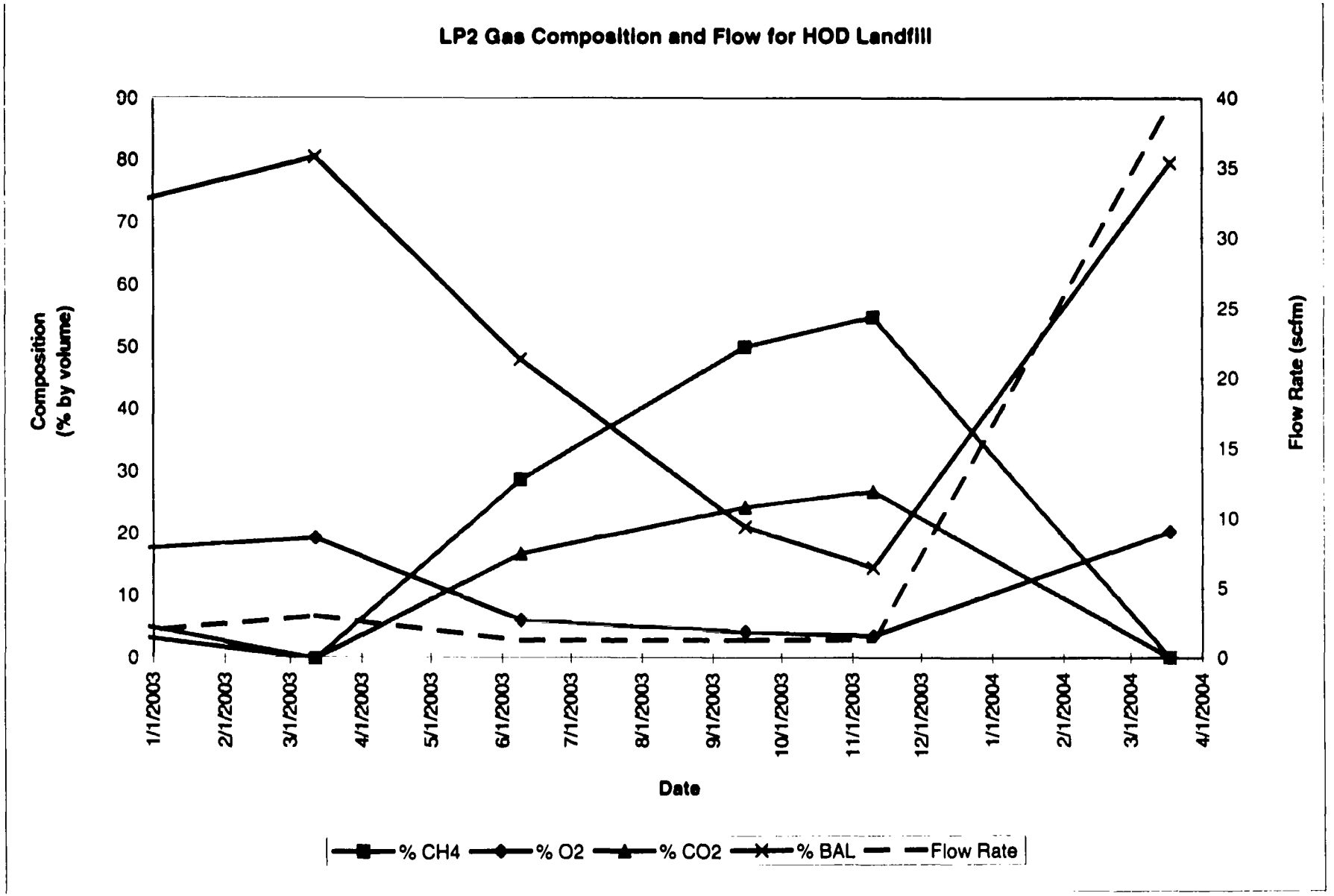

LP1 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate



36

Note: Gas monitoring data was not collected during the June, September, and November 2003 monitoring periods, due sampling ports by the orifice plate that were not operating properly.

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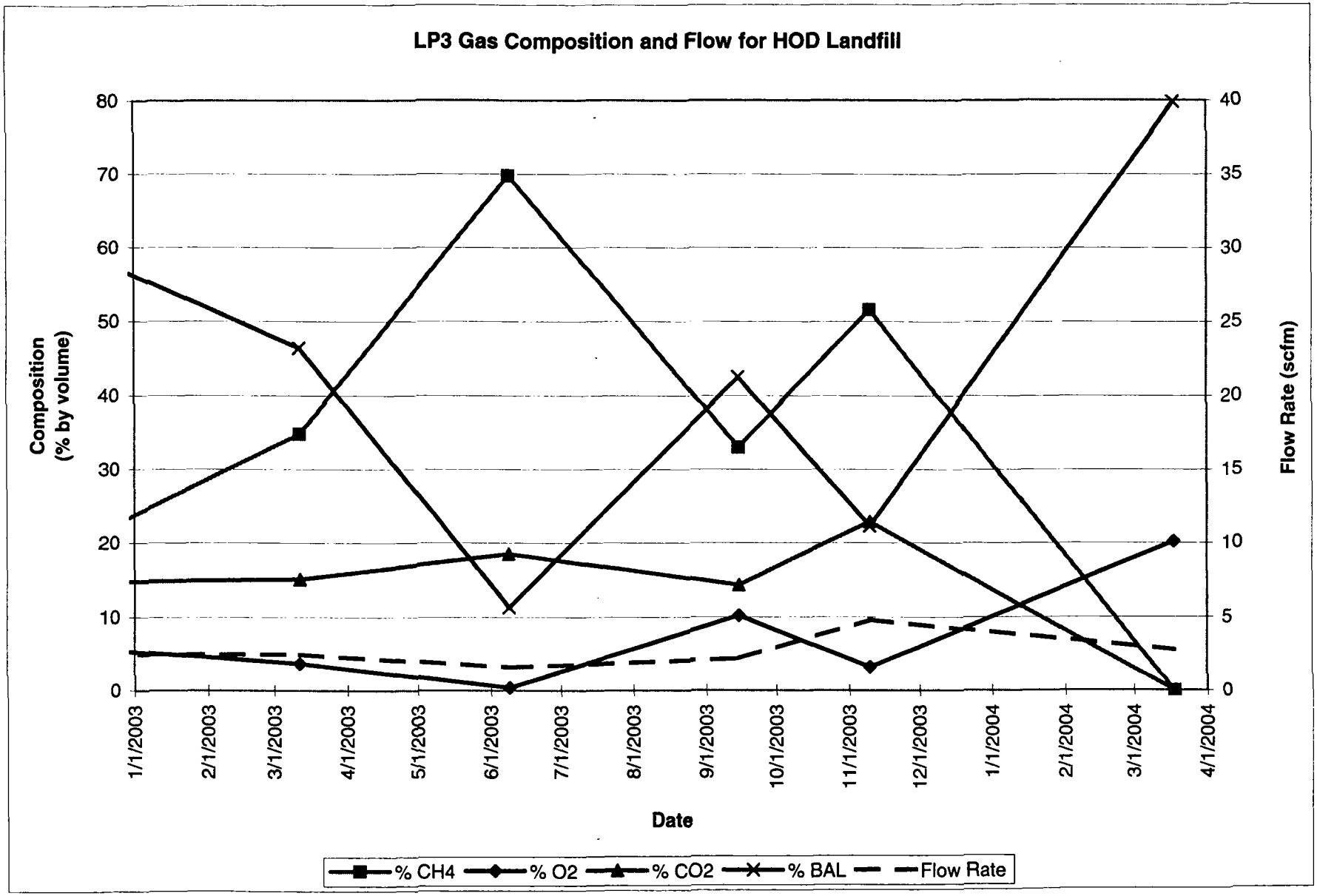
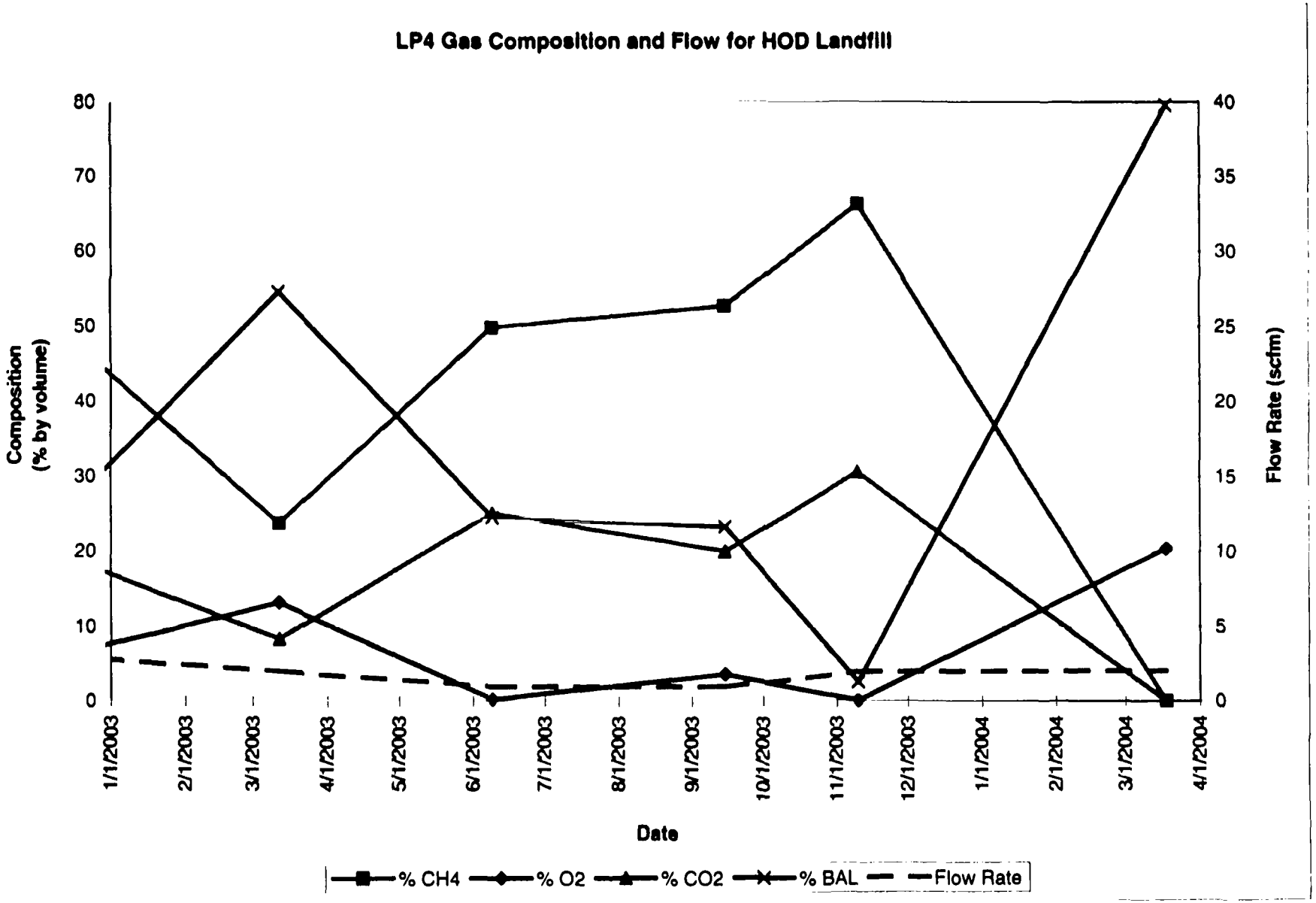
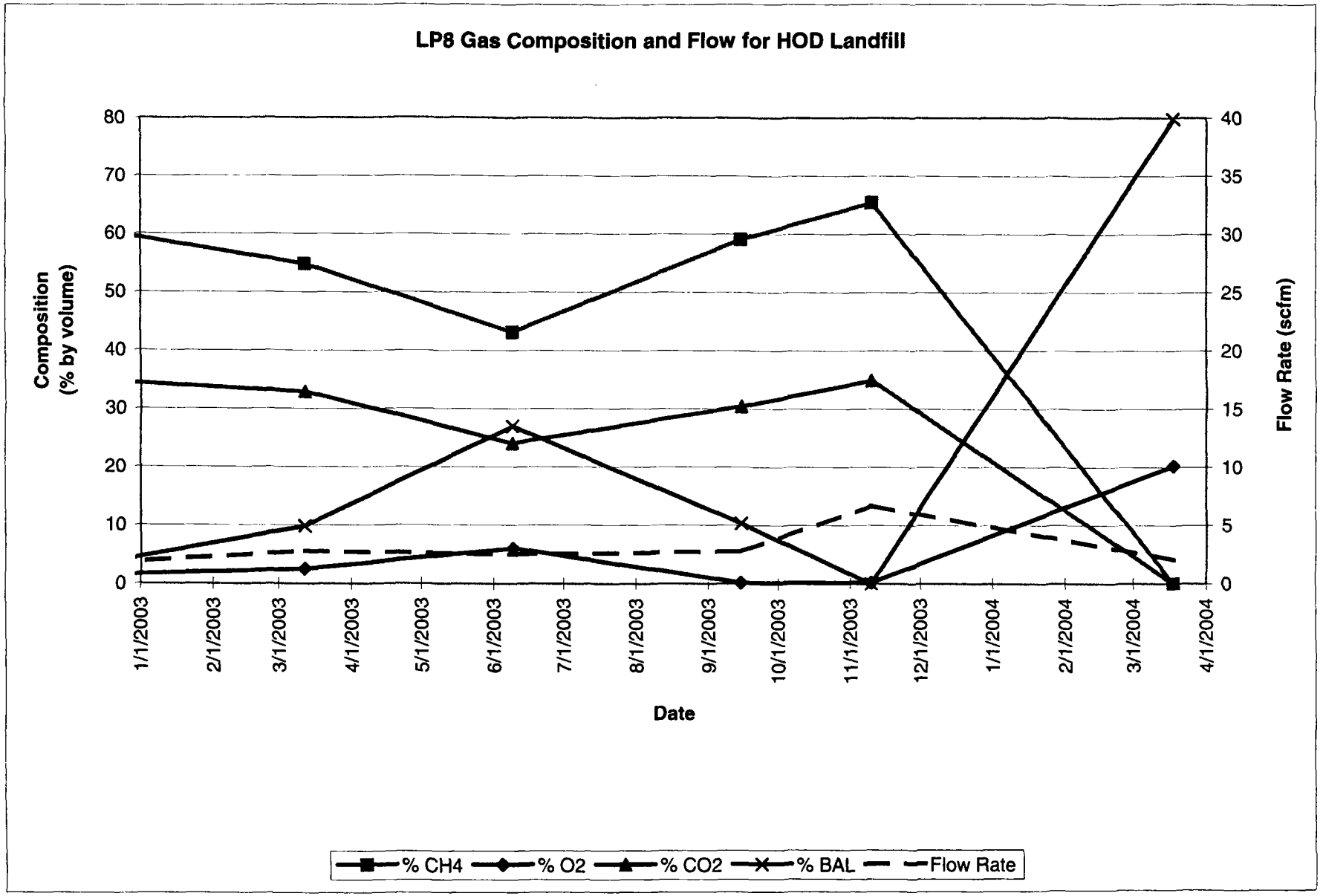
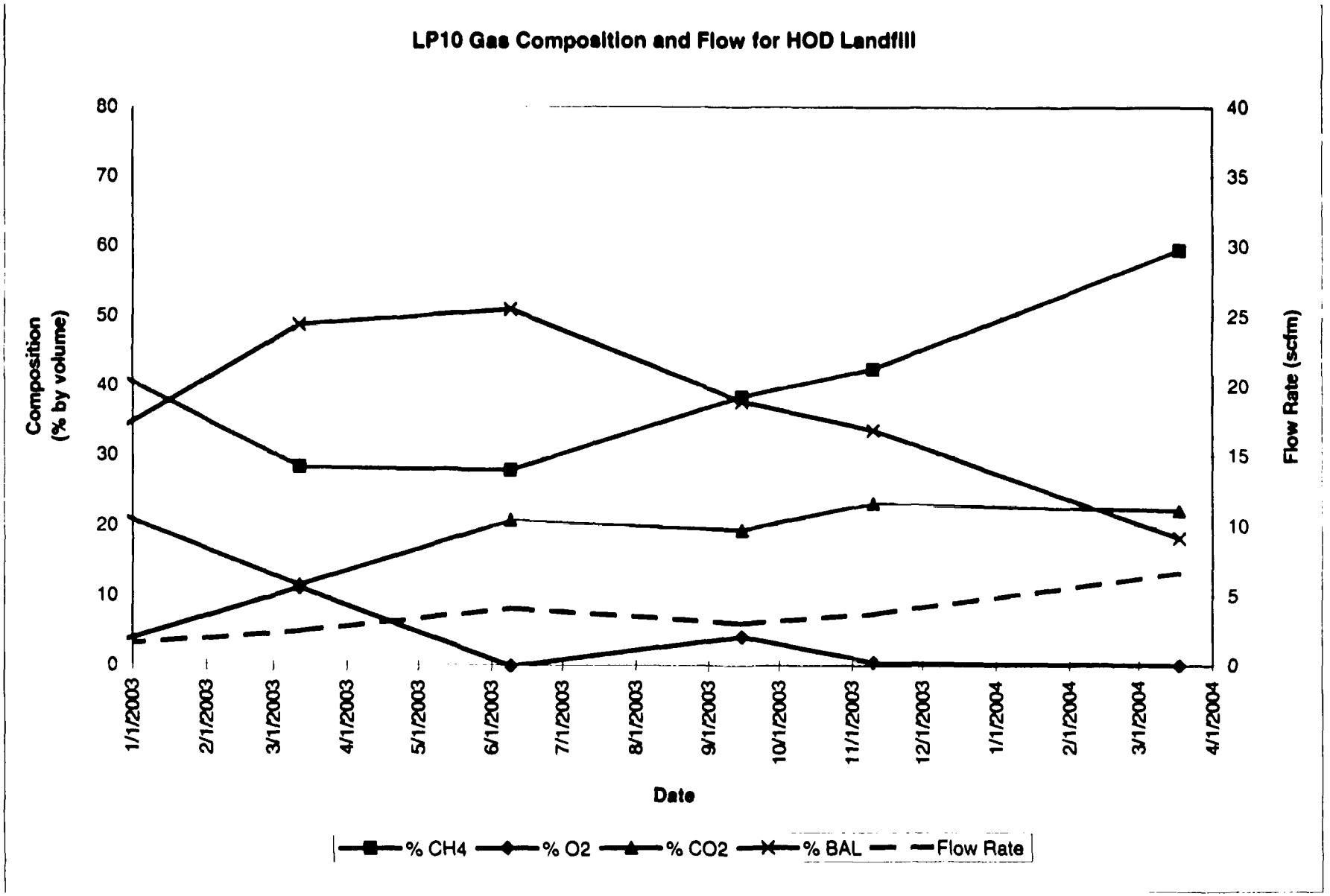

LP3 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate

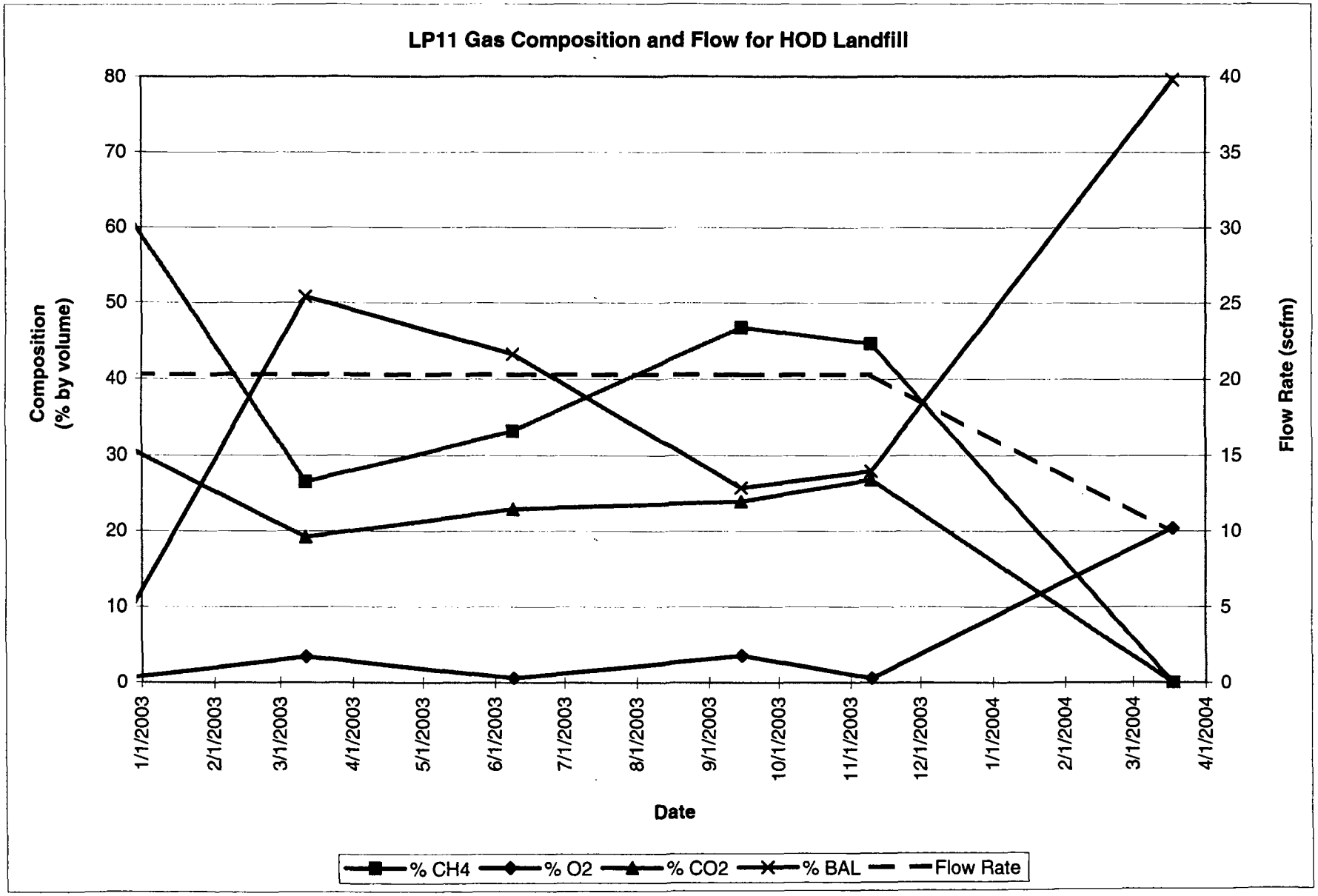
37


LP4 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL
Flow Rate


LP8 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate

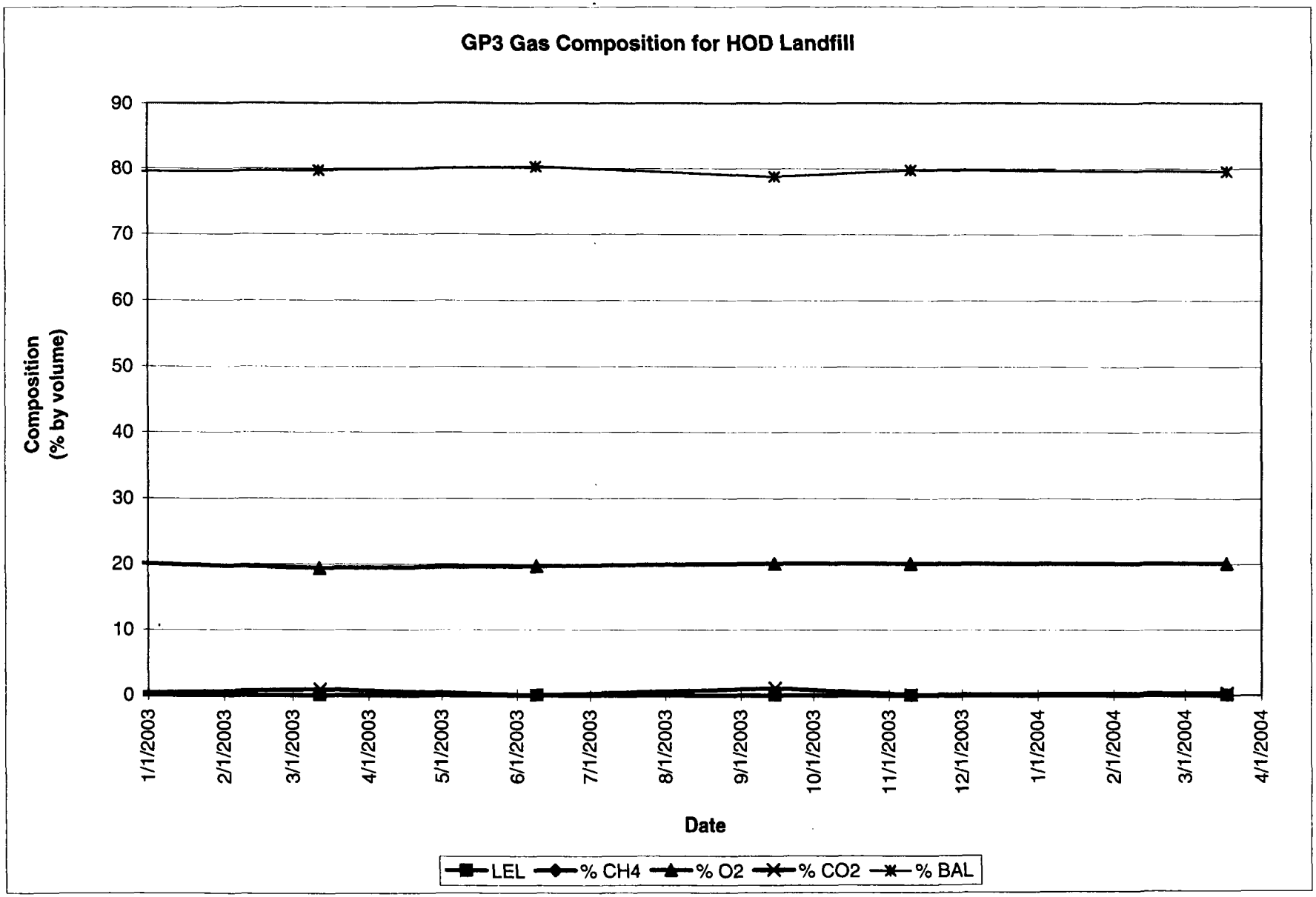
29

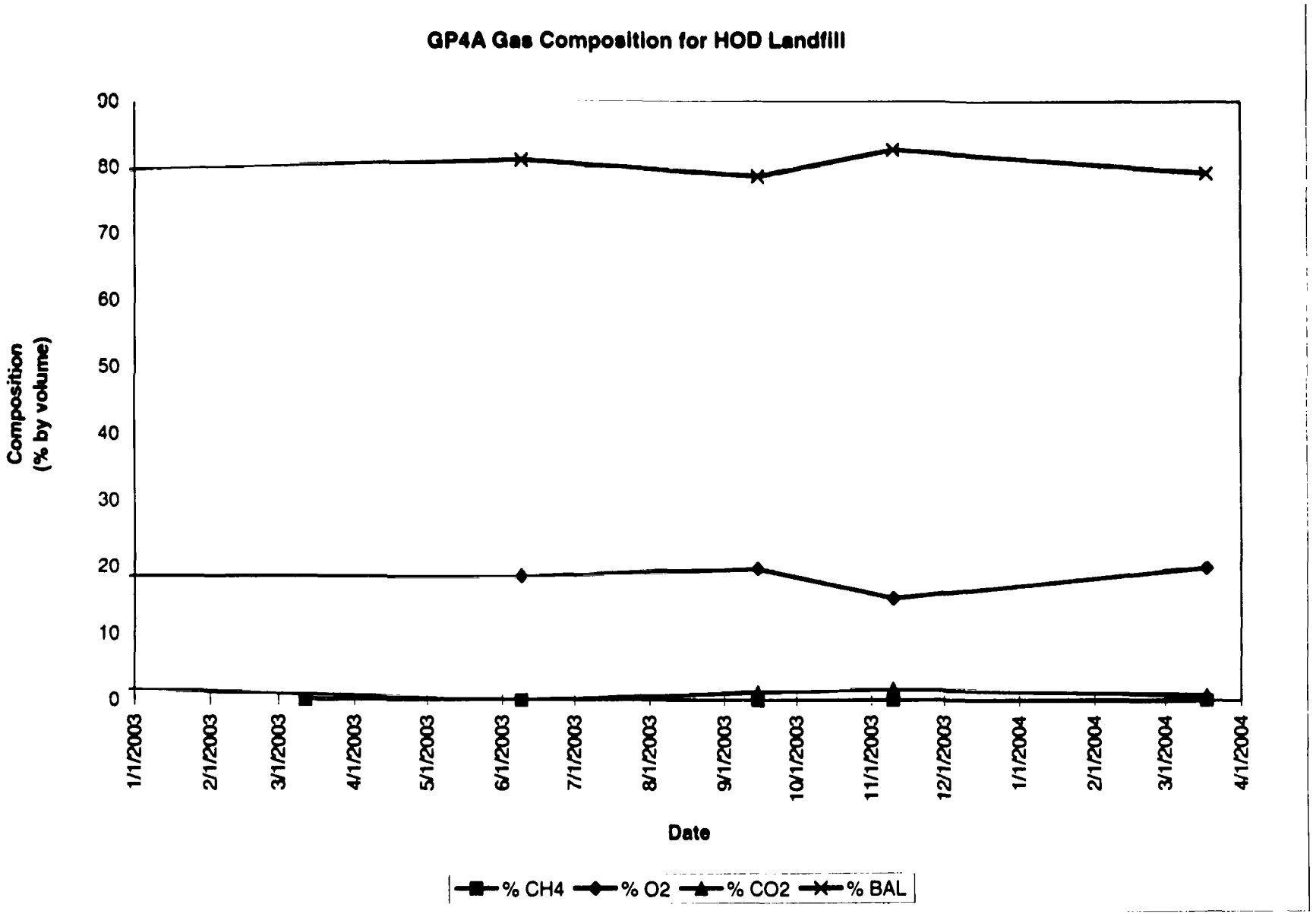

LP10 Gas Composition and Flow for HOD Landfill
Composition (% by volume)
Flow Rate (scfm)
Date
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
% CH4
% O2
% CO2
% BAL
Flow Rate



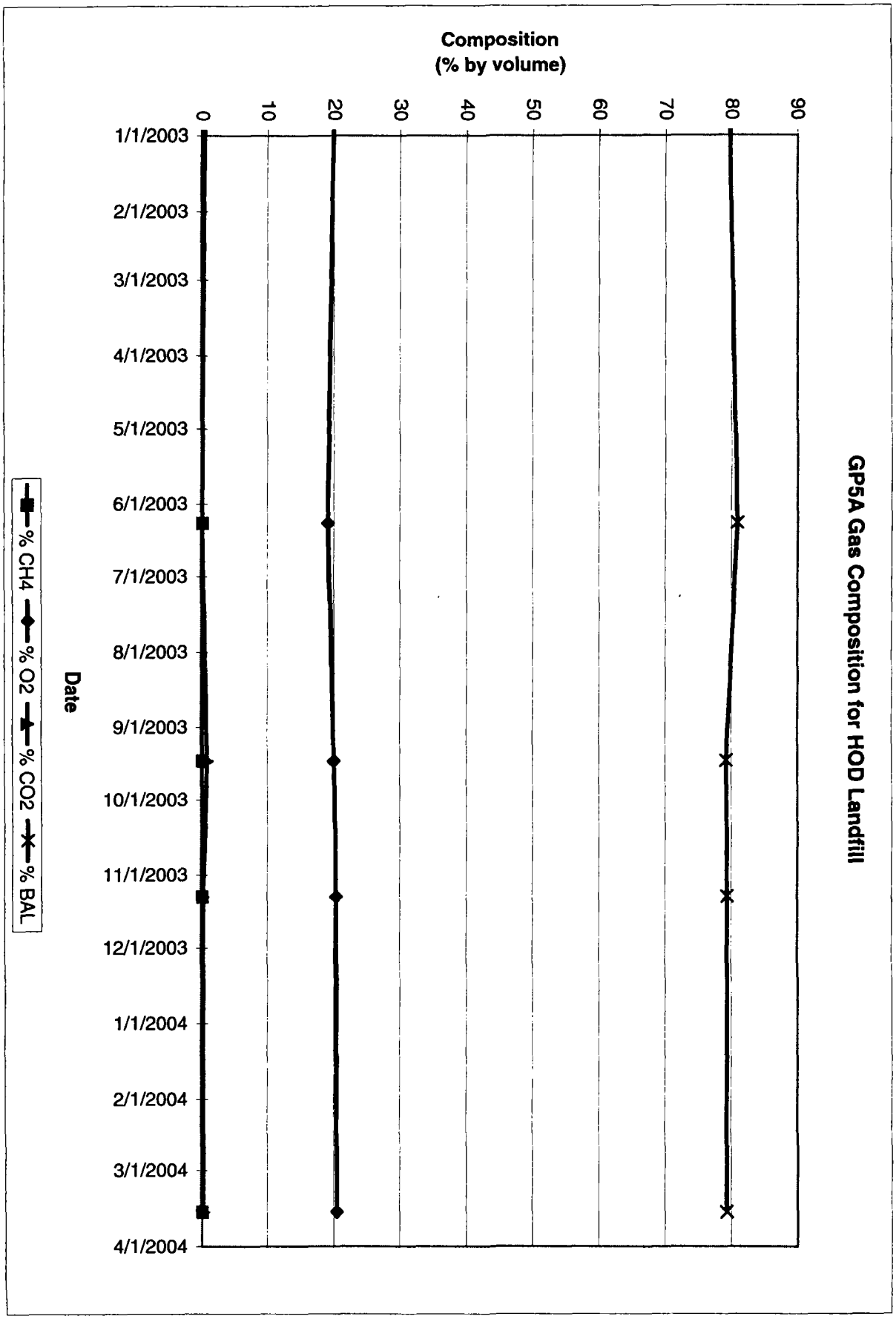
Well LP11 flow rate was not measured during the September or November sampling period due to broken wellhead connectors.

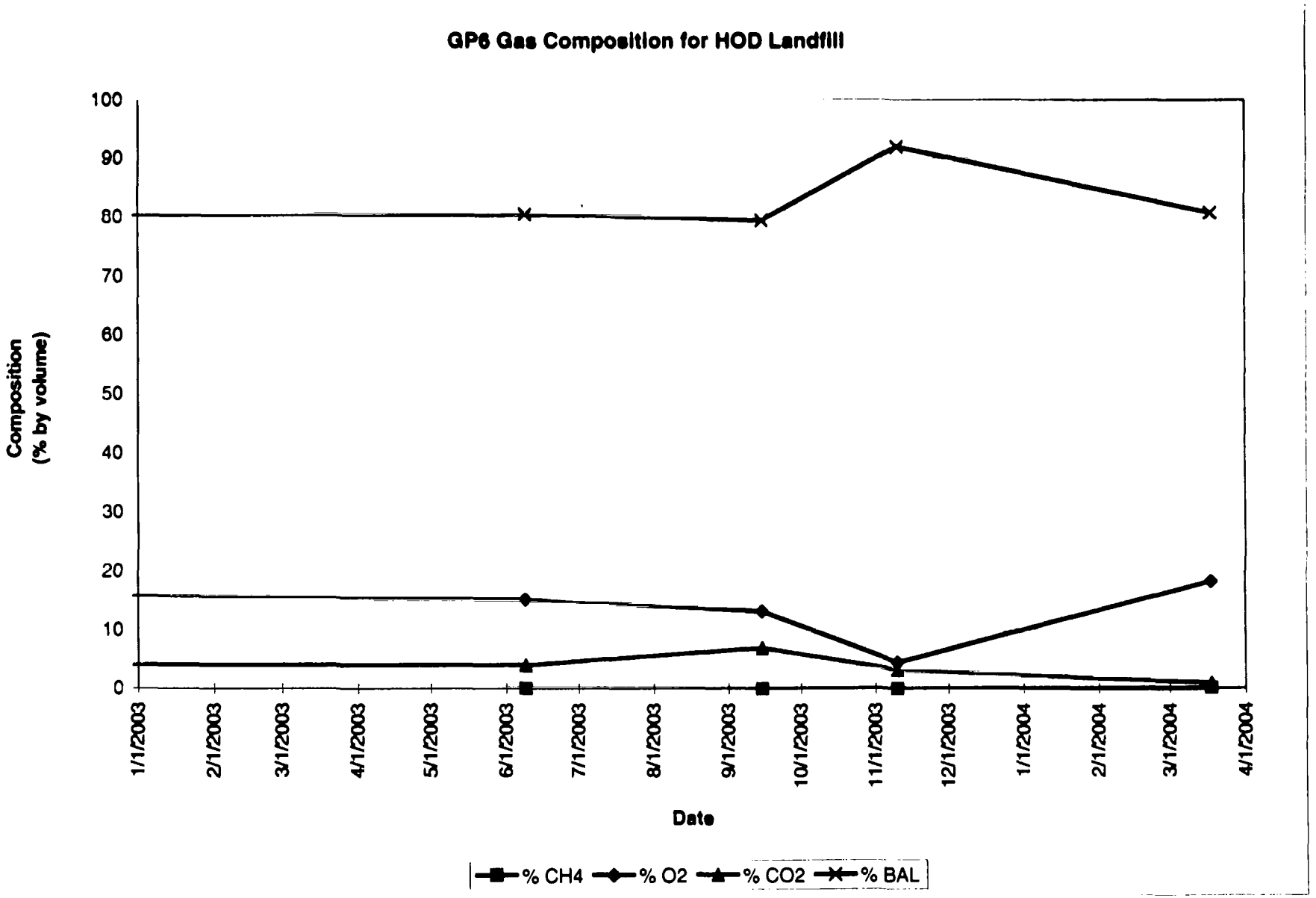
Gas Probes


GP3 Gas Composition for HOD Landfill
Composition (% by volume)
90
80
70
60
50
40
30
20
10
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
LEL
% CH4
% O2
% CO2
% BAL

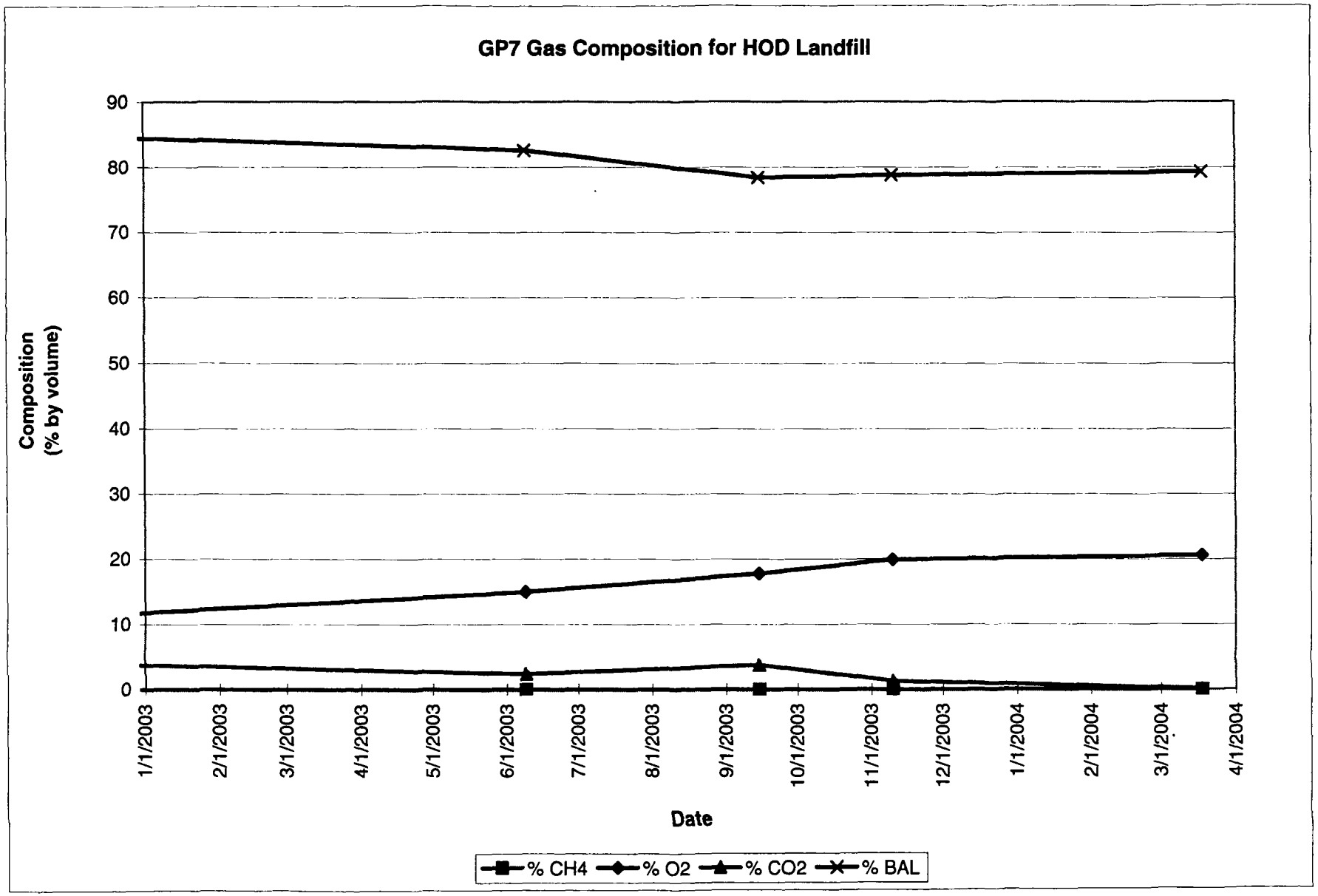

GP4A Gas Composition for HOD Landfill
Composition (% by volume)
90
80
70
60
50
40
30
20
10
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL

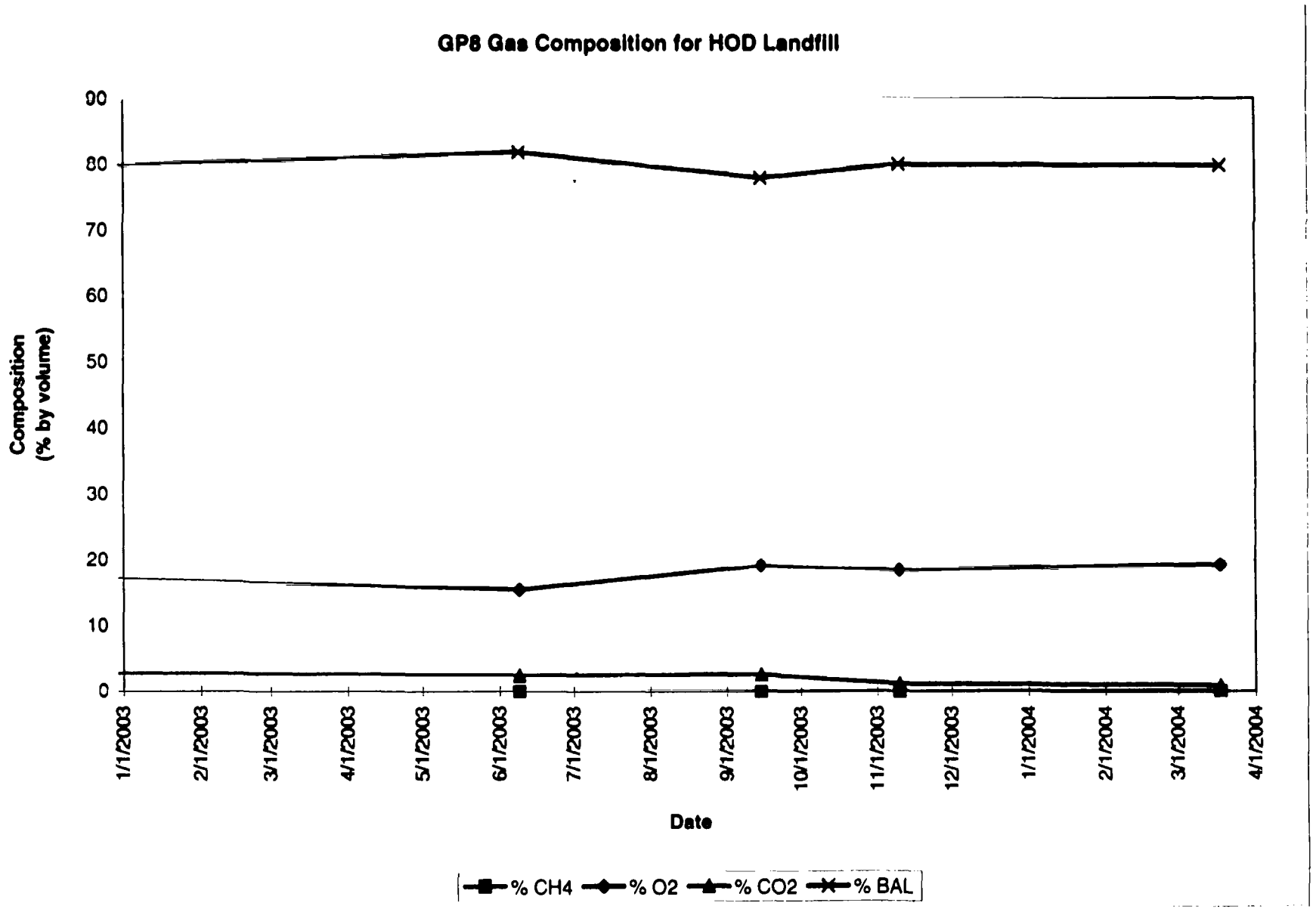
47


GP5A Gas Composition for HOD Landfill
Composition
(% by volume)
0
10
20
30
40
50
60
70
80
90
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL


GP6 Gas Composition for HOD Landfill
Composition (% by volume)
100
90
80
70
60
50
40
30
20
10
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL

48


GP7 Gas Composition for HOD Landfill
Composition (% by volume)
90
80
70
60
50
40
30
20
10
0
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
1/1/2004
2/1/2004
3/1/2004
4/1/2004
Date
% CH4
% O2
% CO2
% BAL



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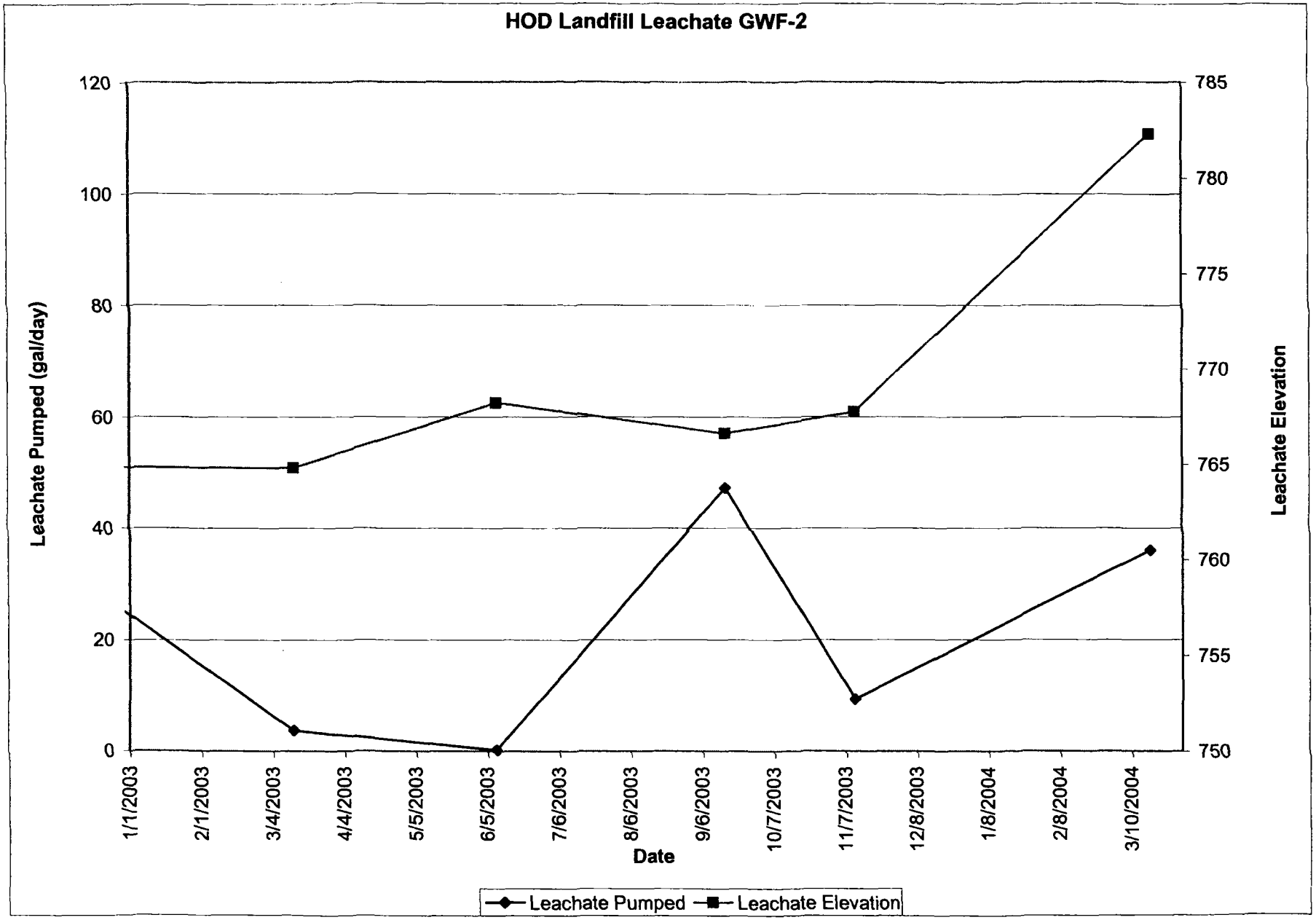
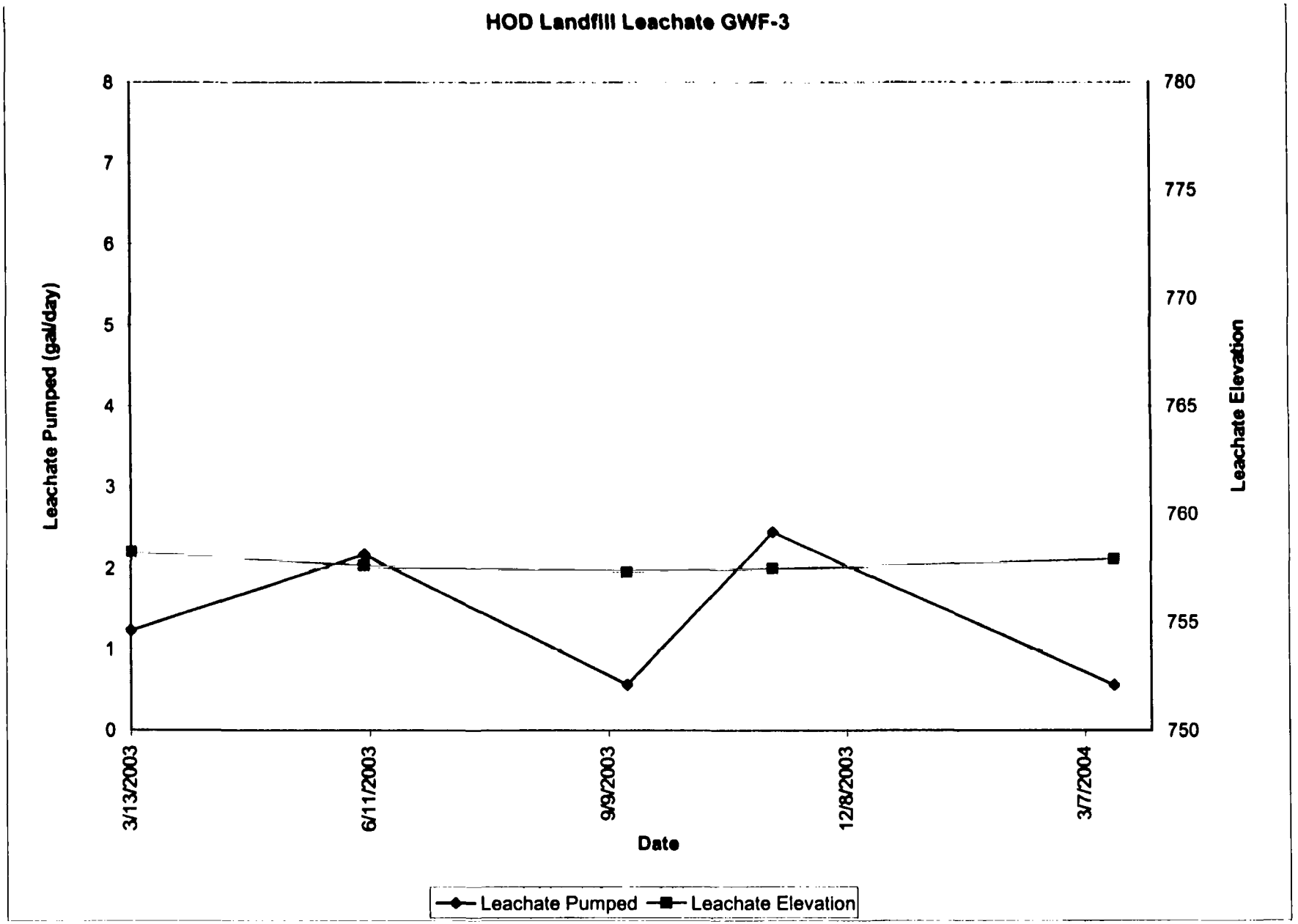
Appendix D
Leachate Monitoring Data

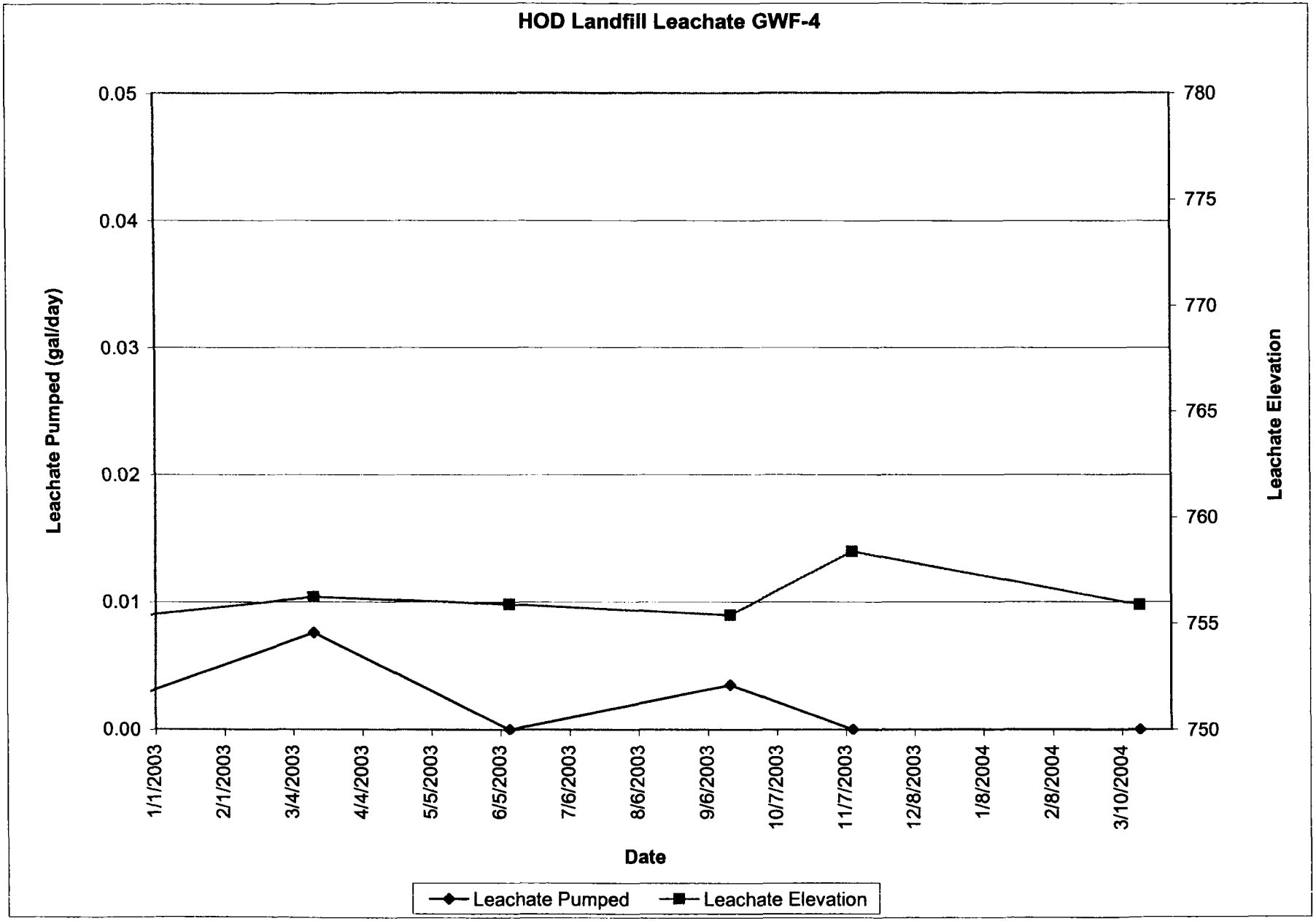
Leachate Extraction Wells



Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

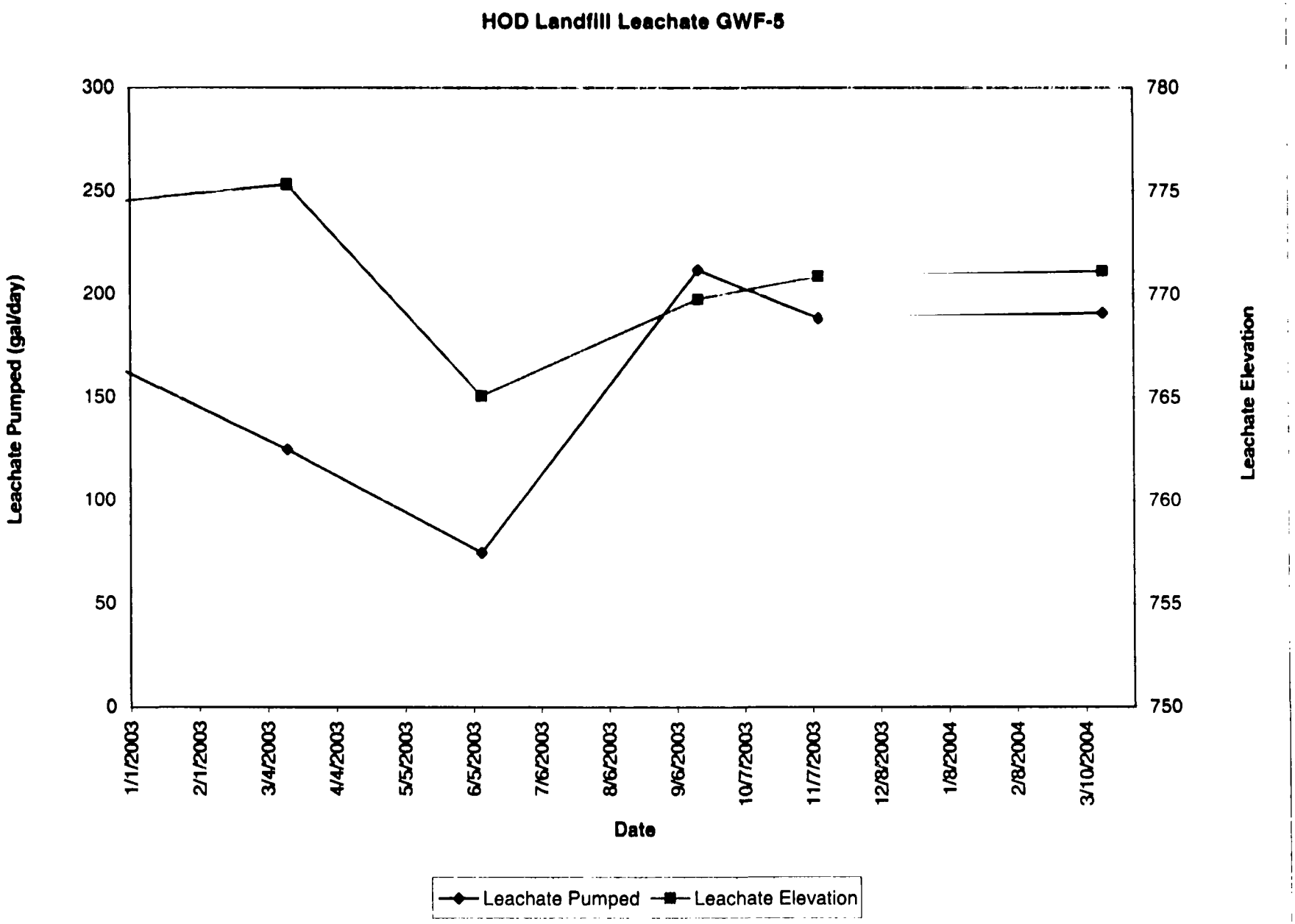


Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

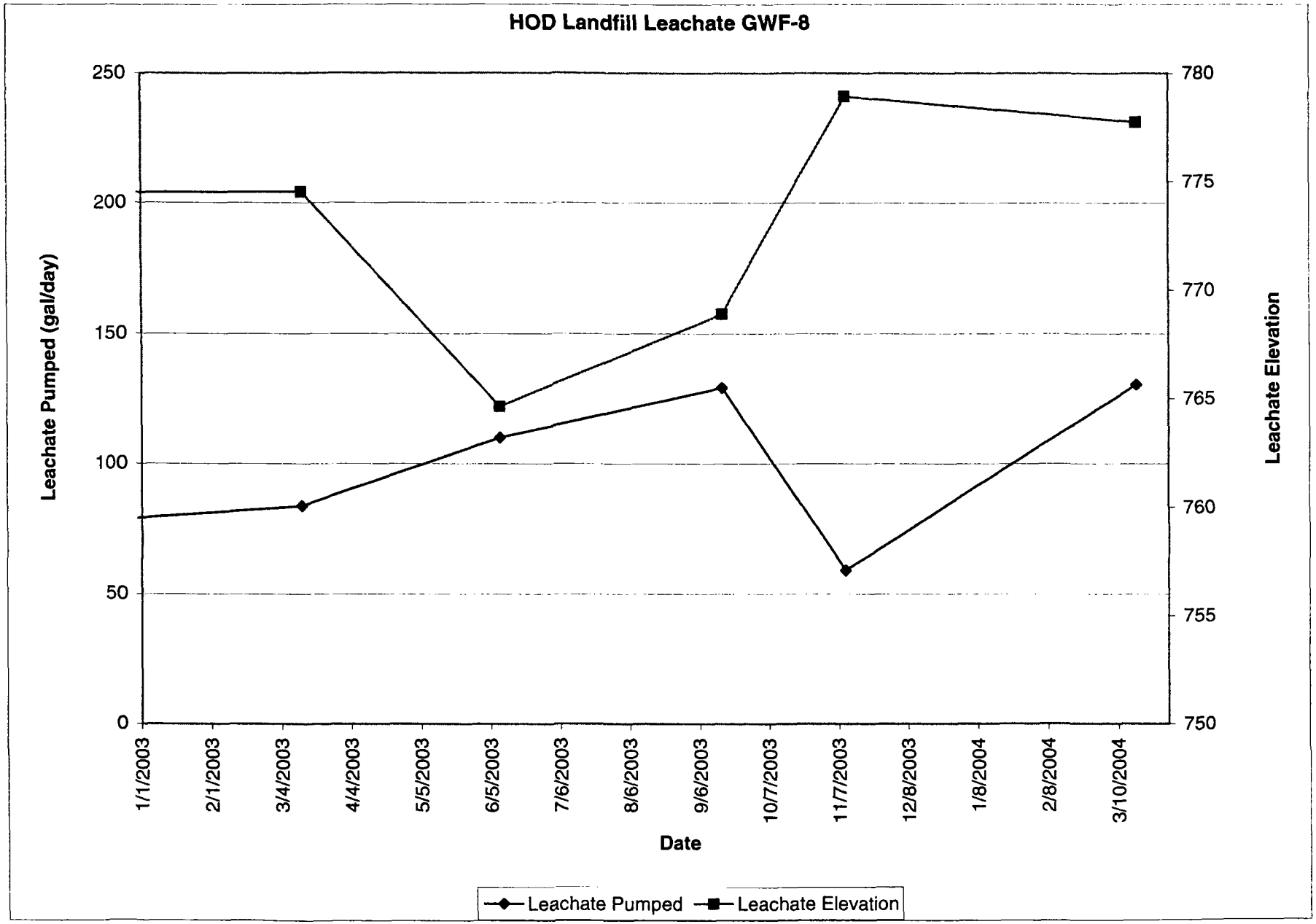


Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

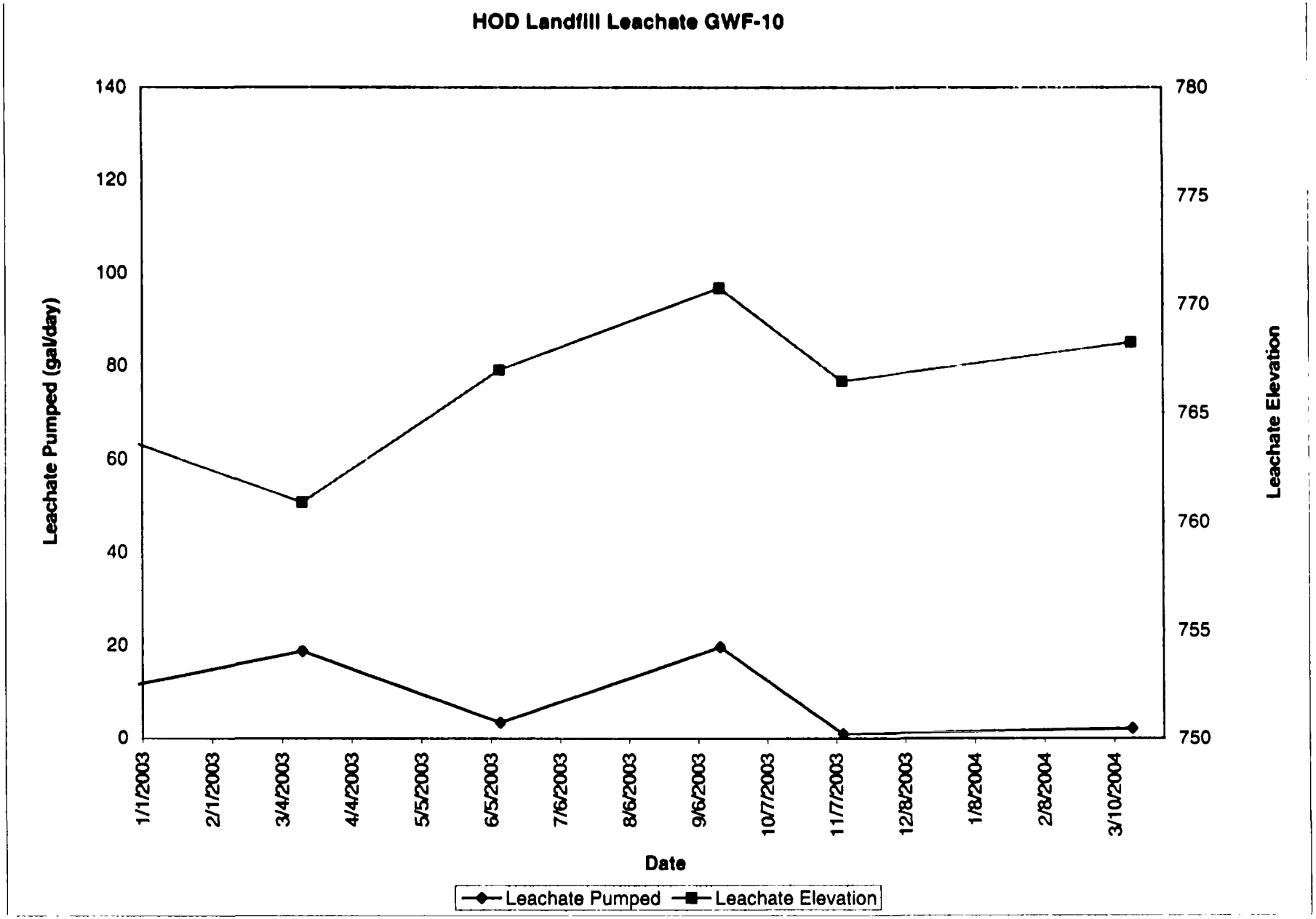
5



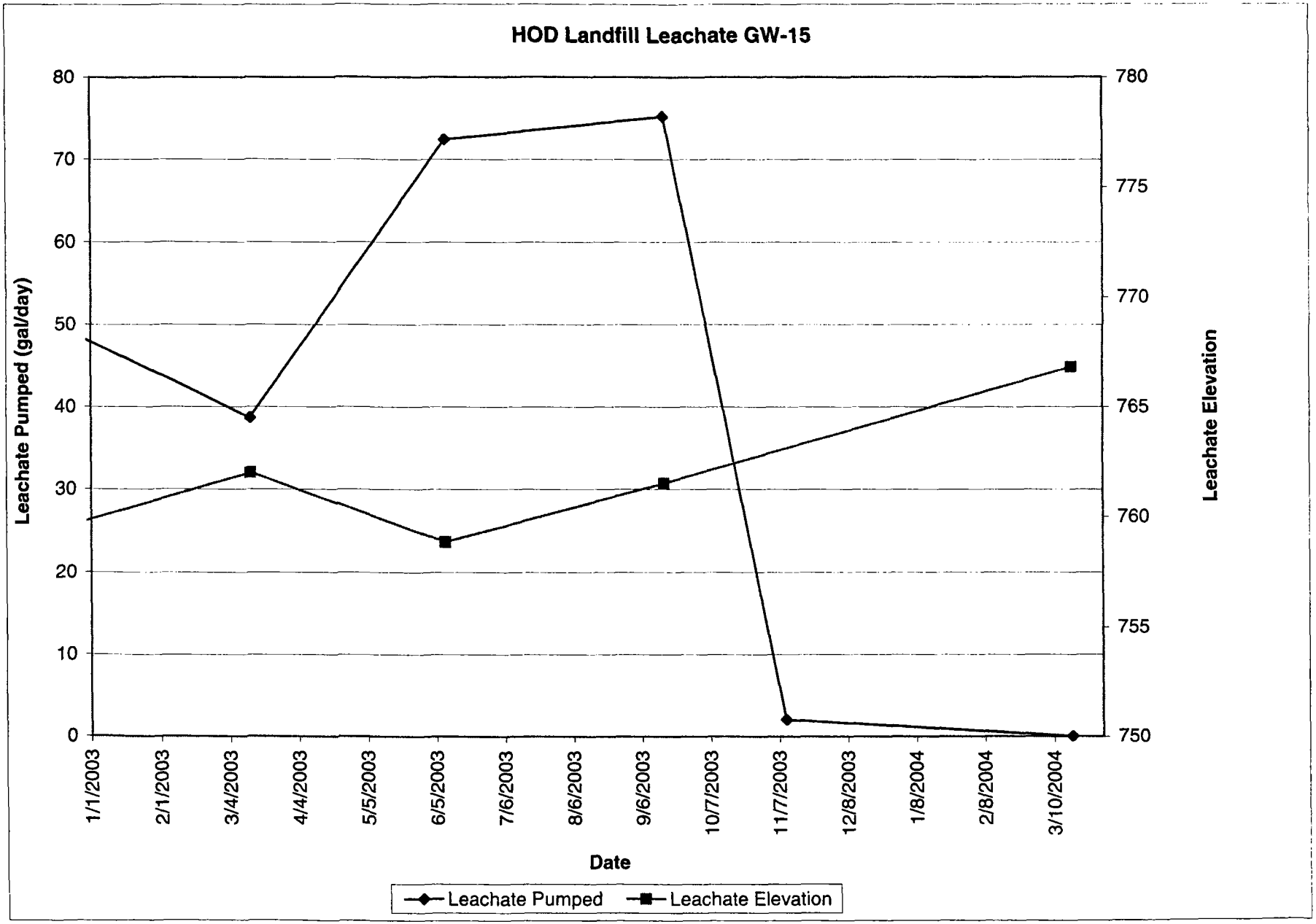
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



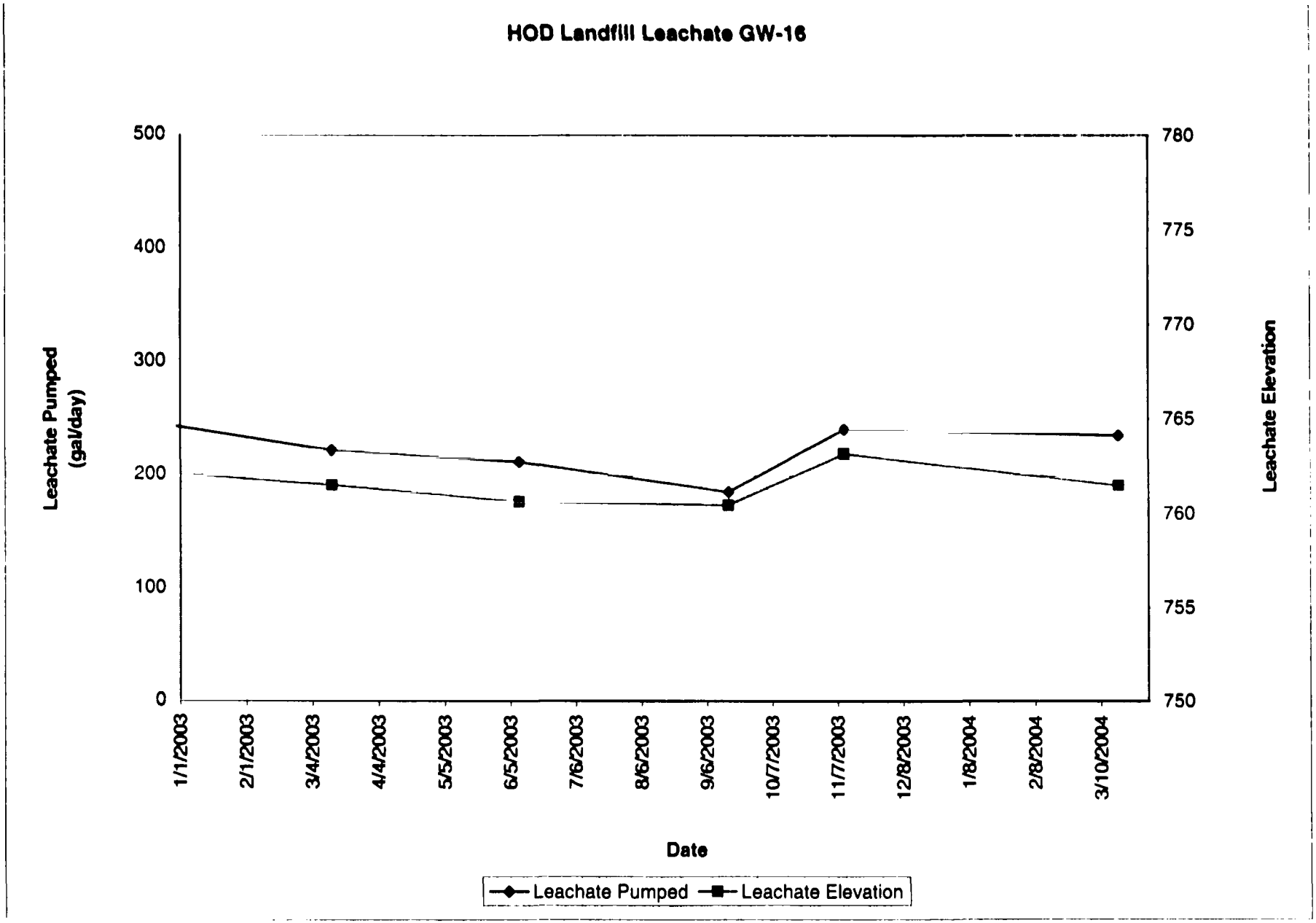
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



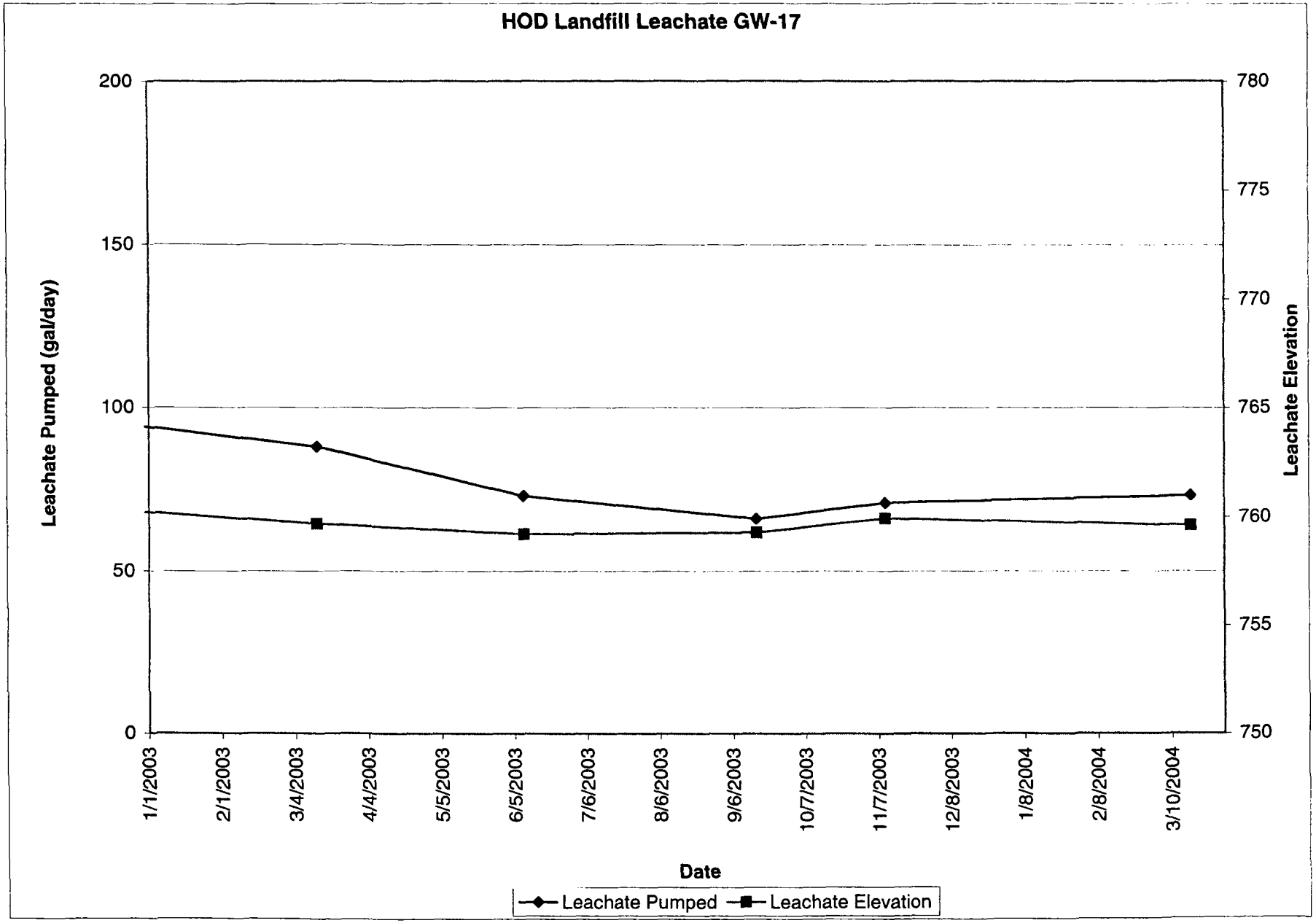
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



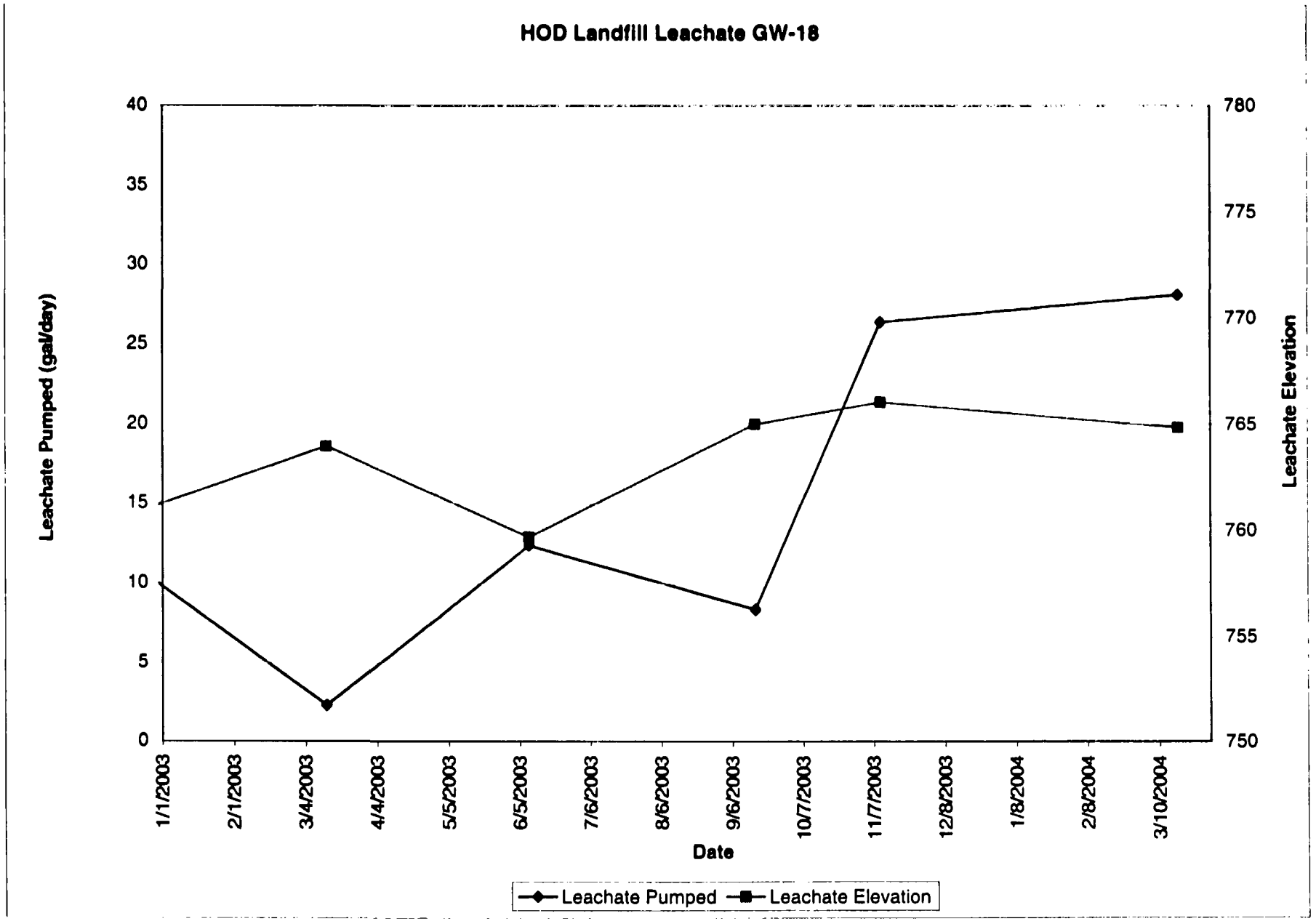
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



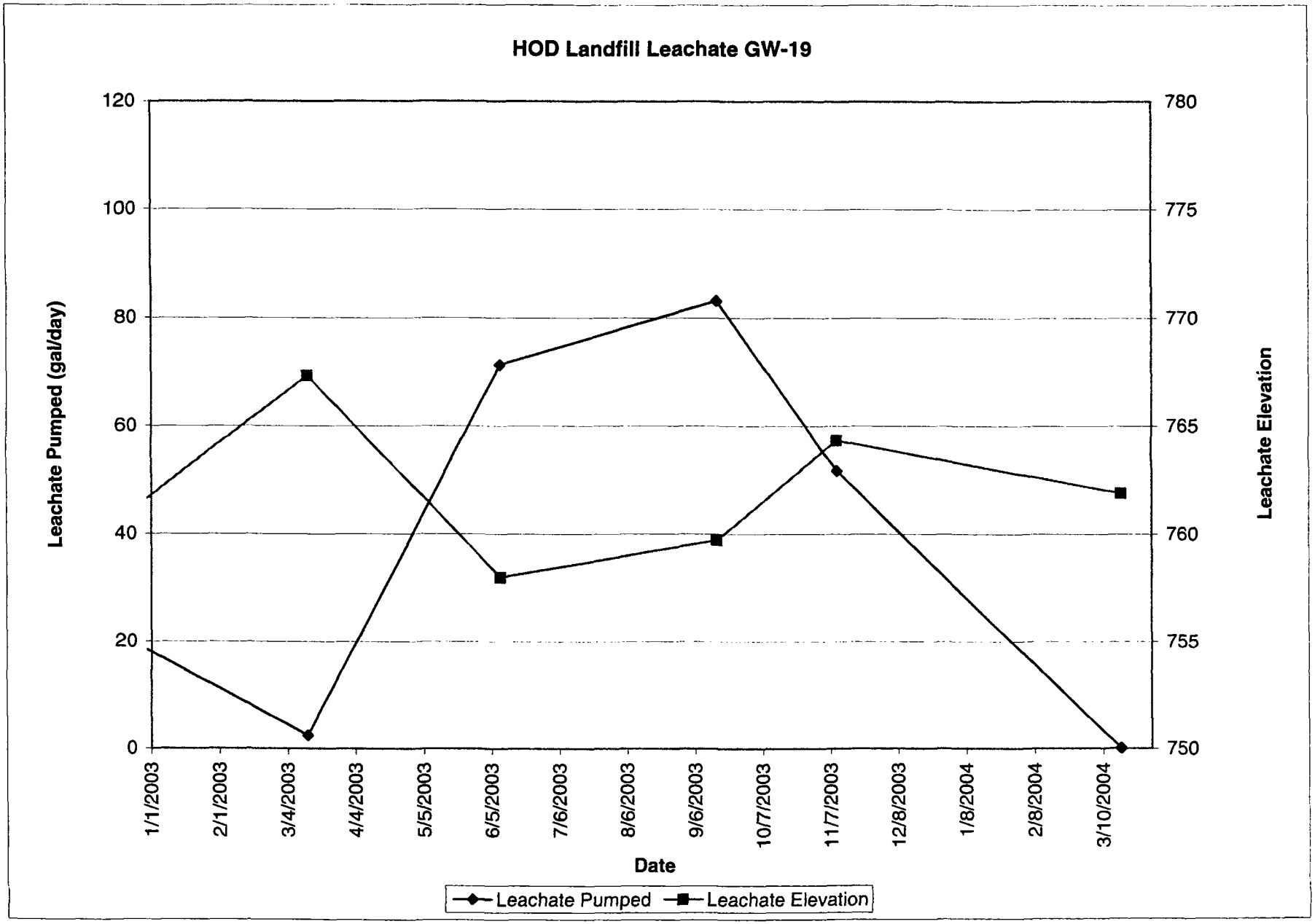
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



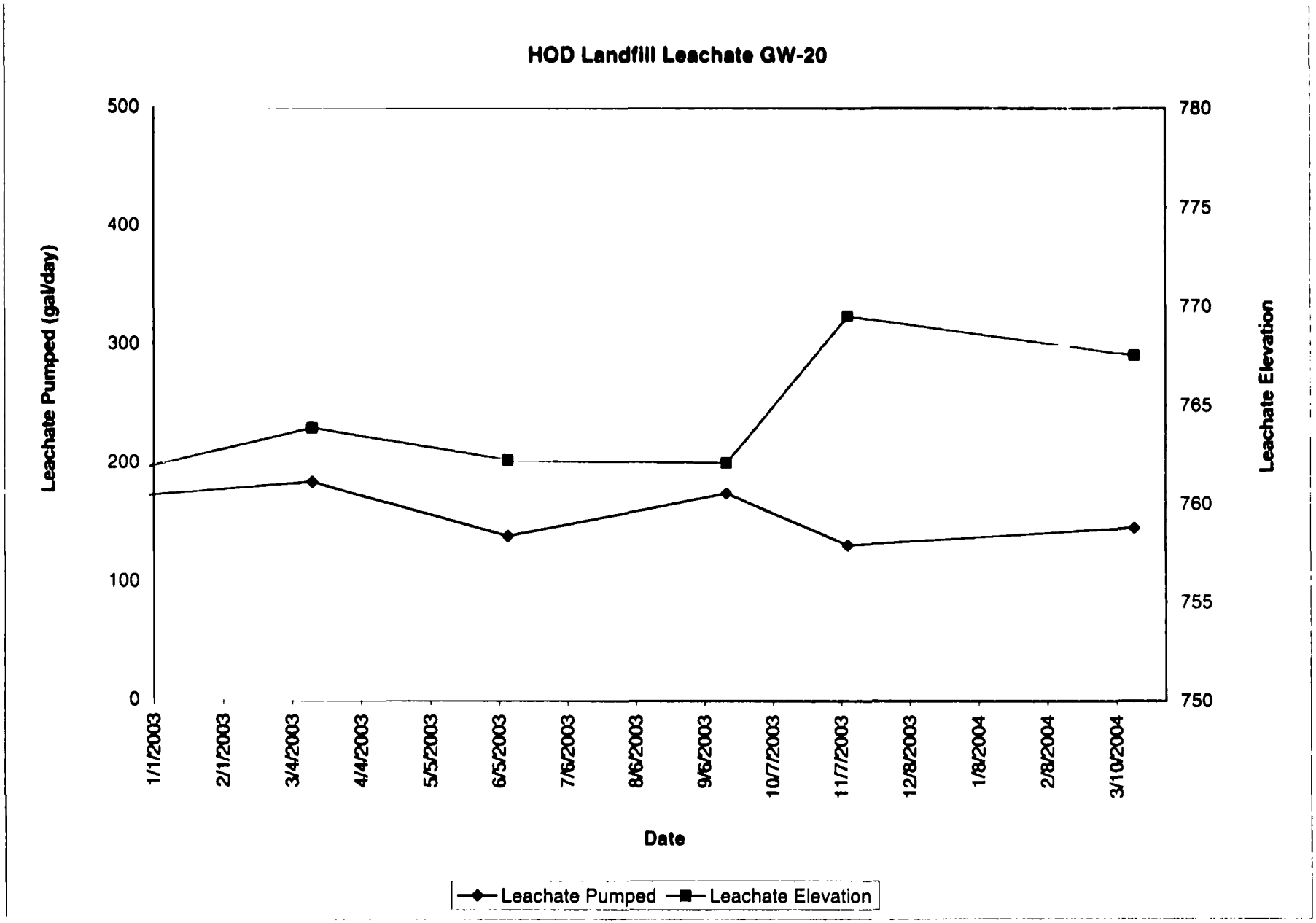
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



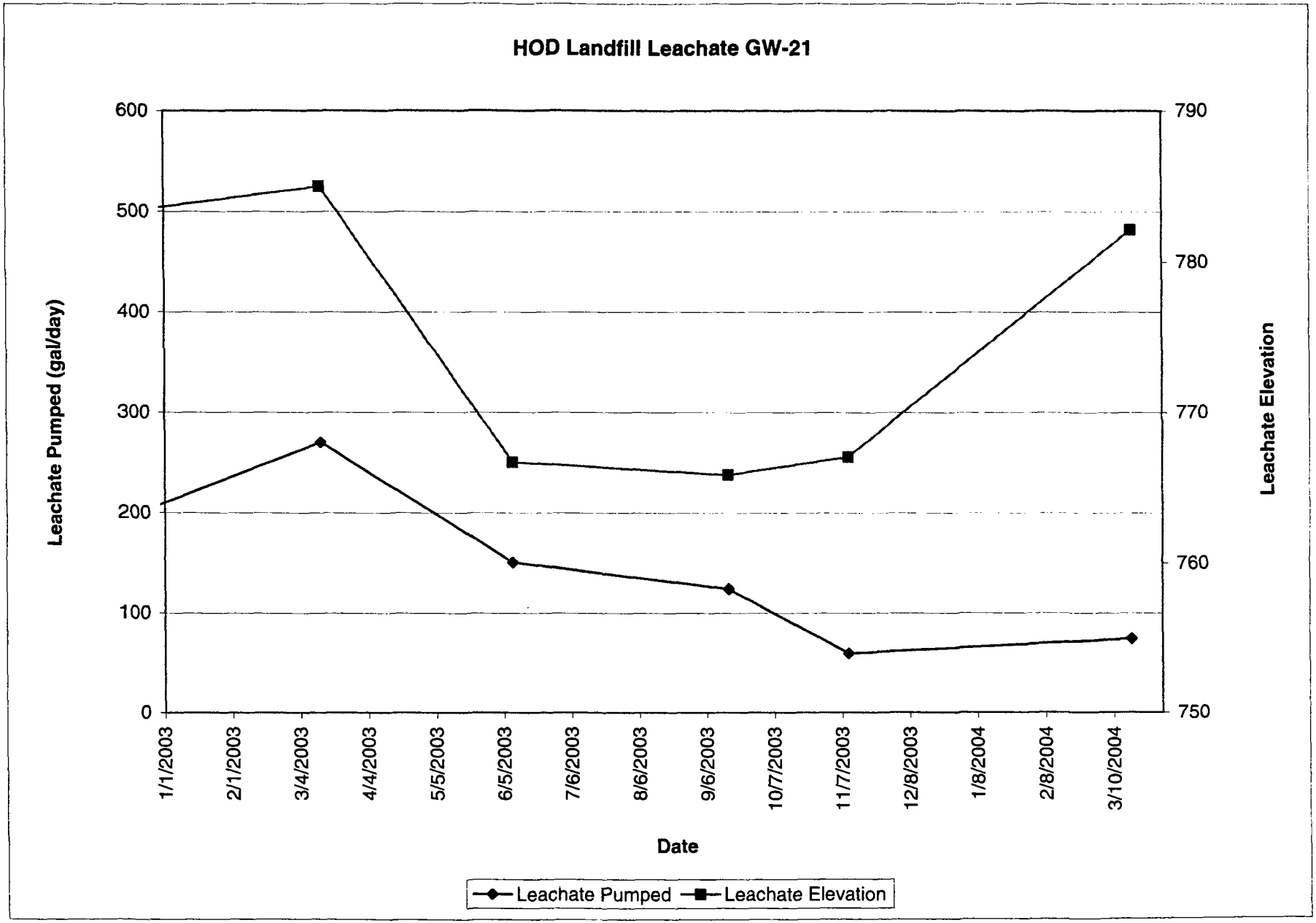
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

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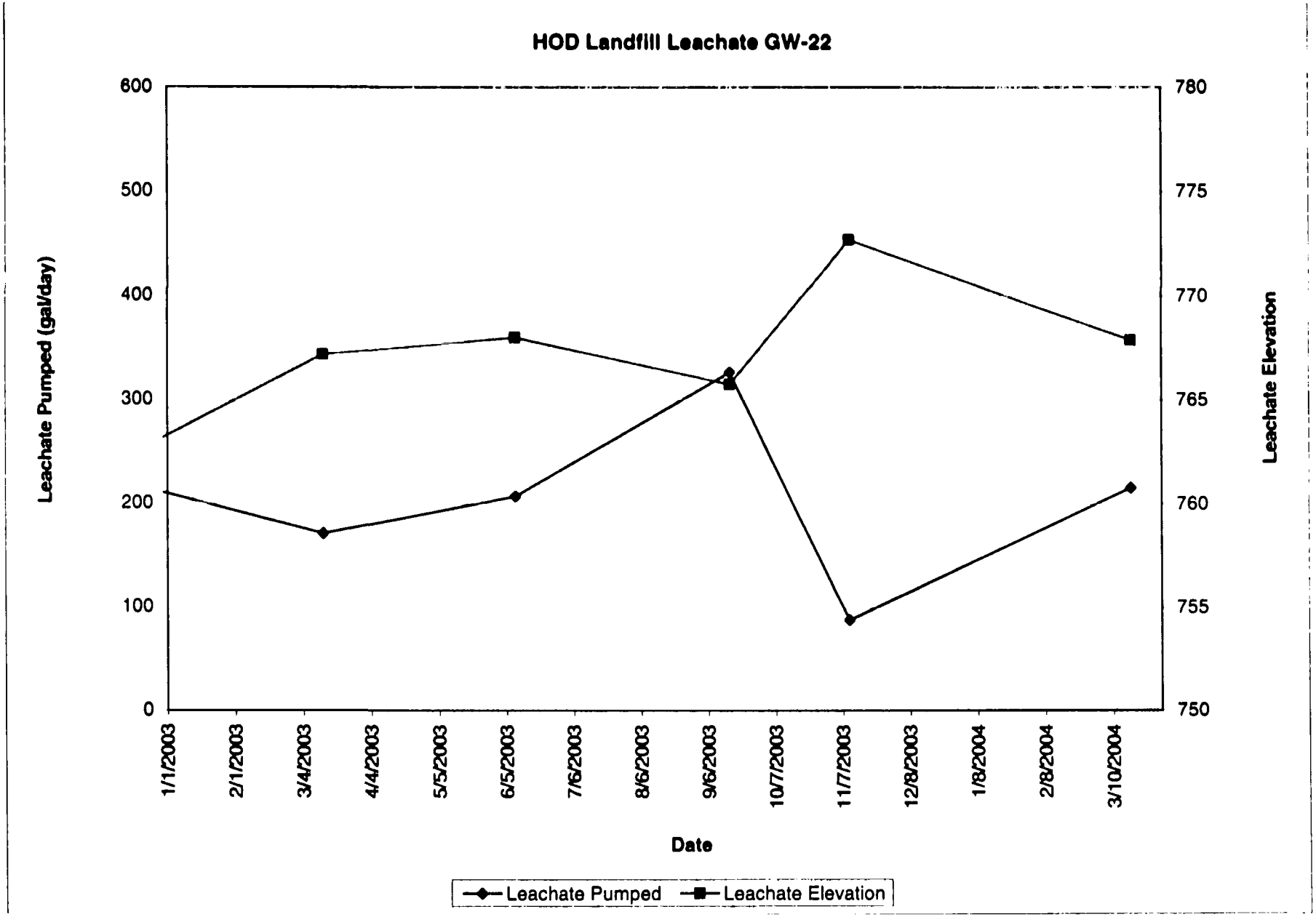
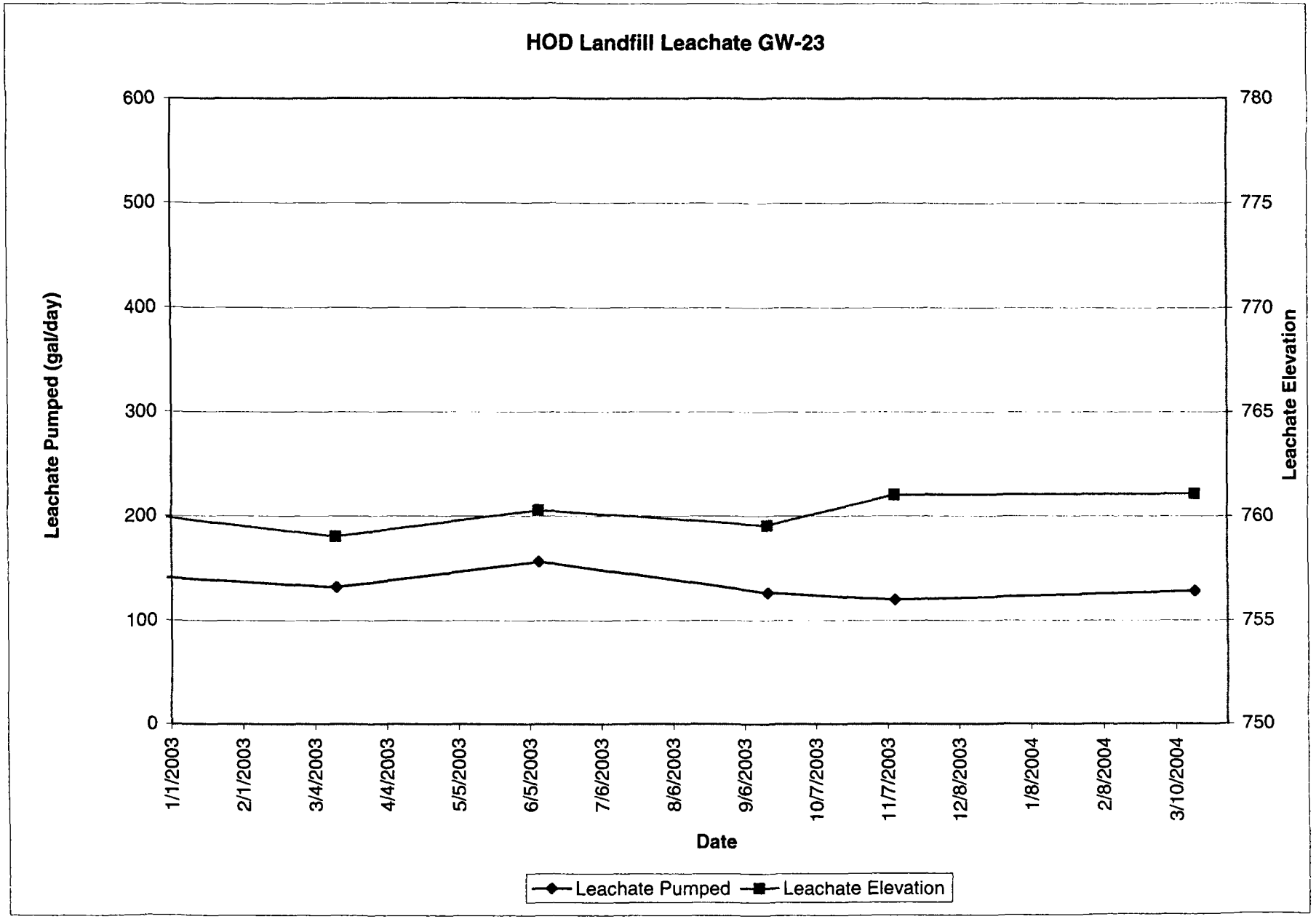


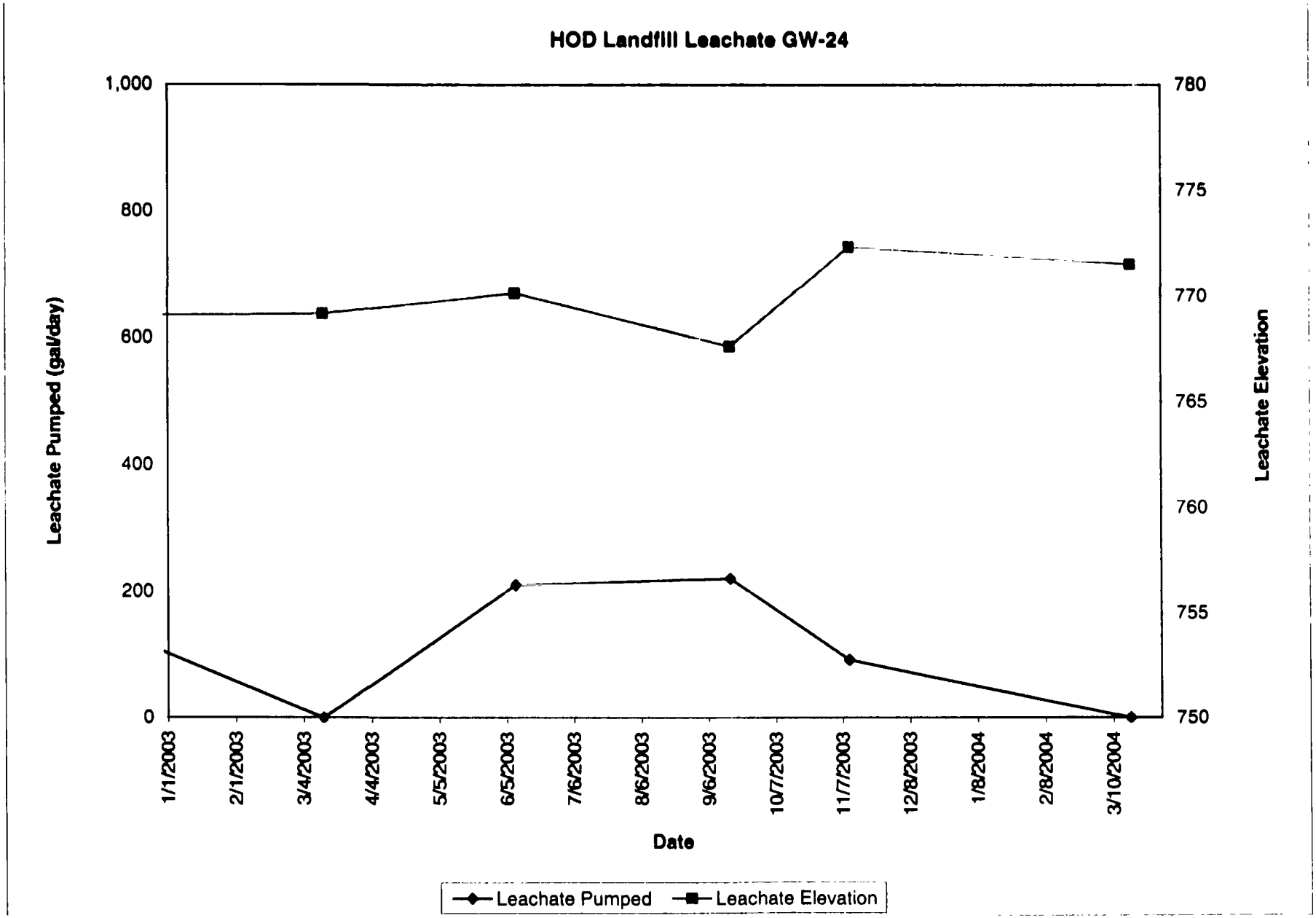
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

I:\WPMSN\PJT\00-05314\46\000531446-004.XLS 6/17/2004



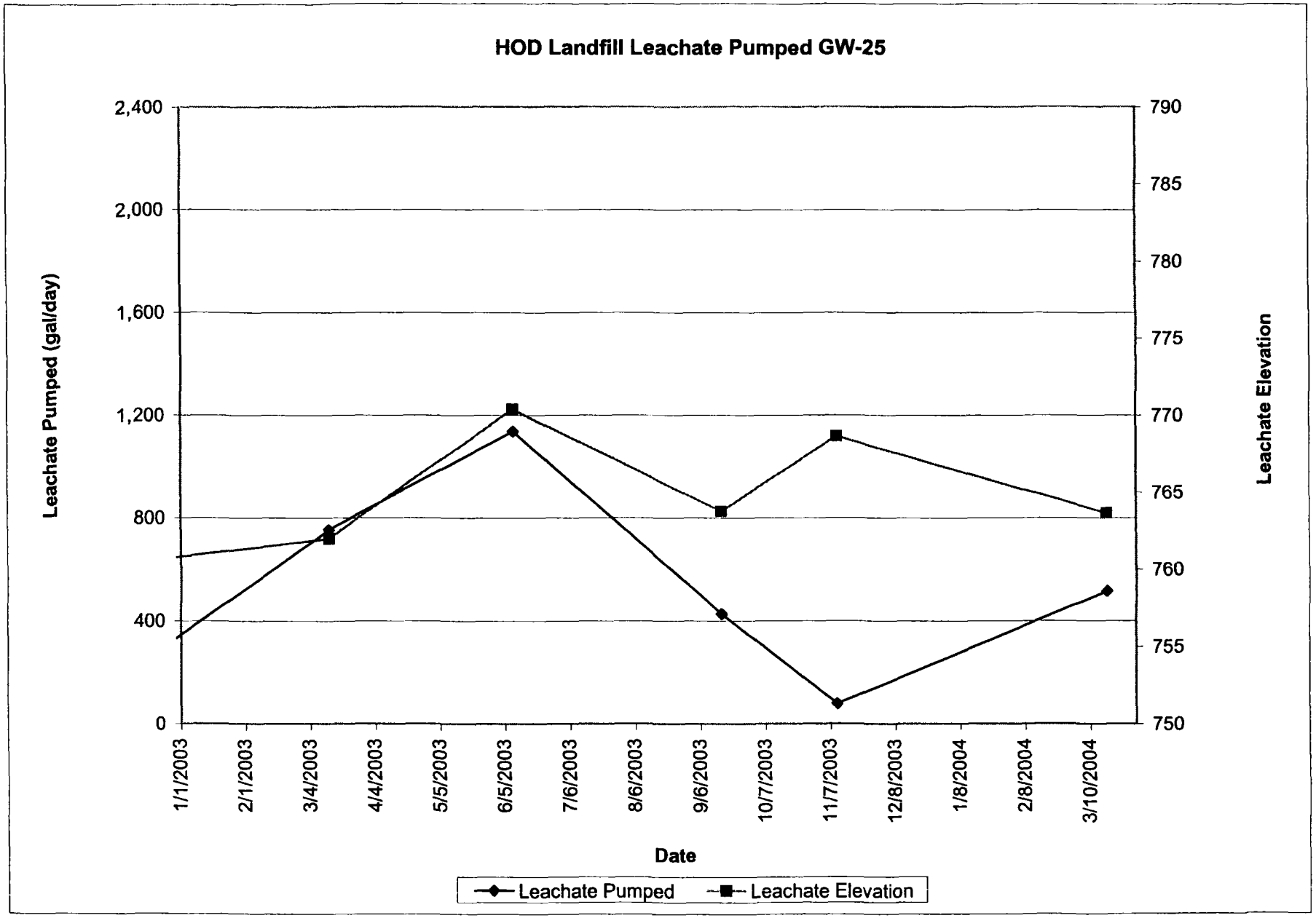
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

I:\WPMSN\PJT\00-05314\46\000531446-004.XLS 6/17/2004



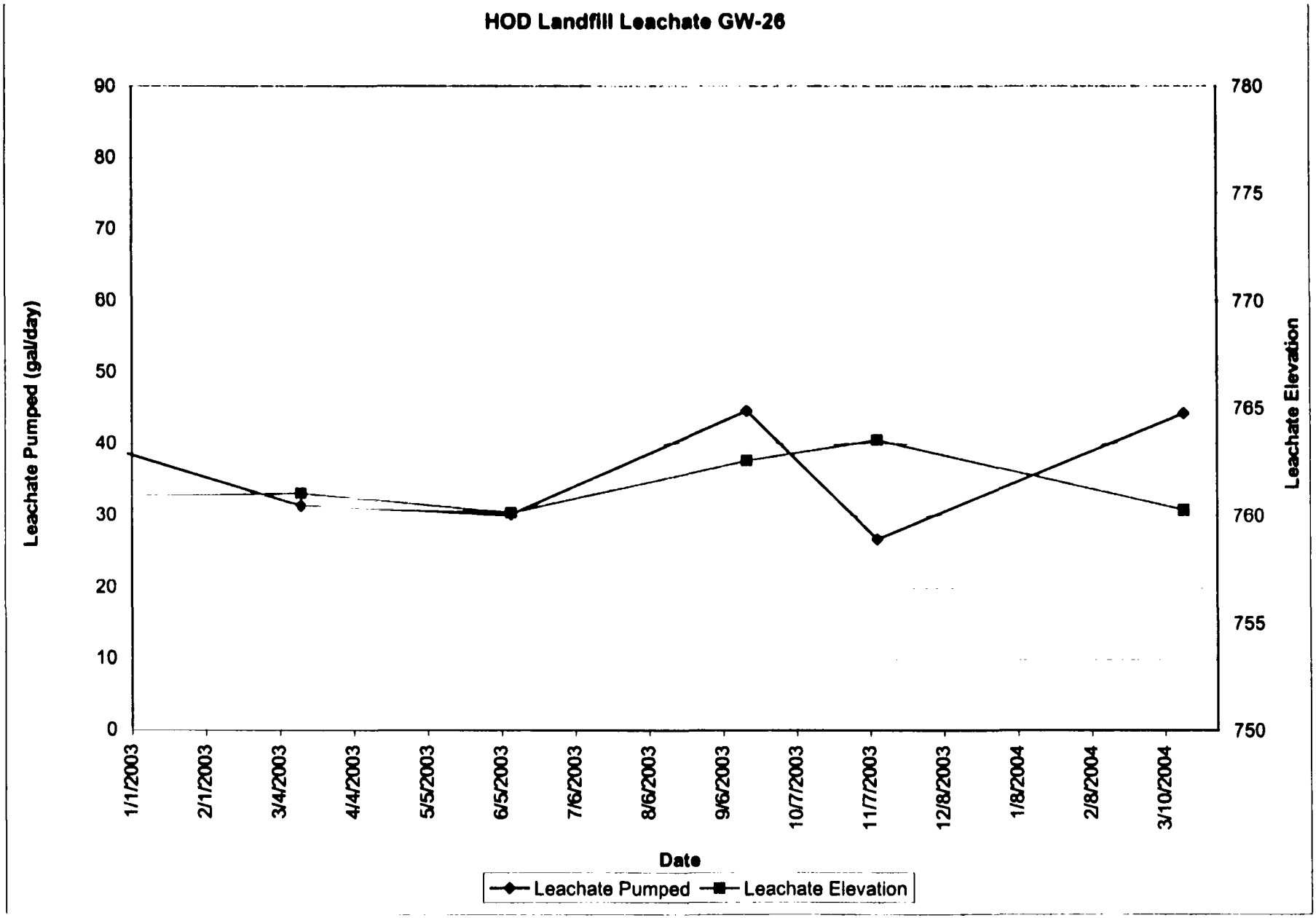
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August, and March) and for 7 days in November (2003).

81



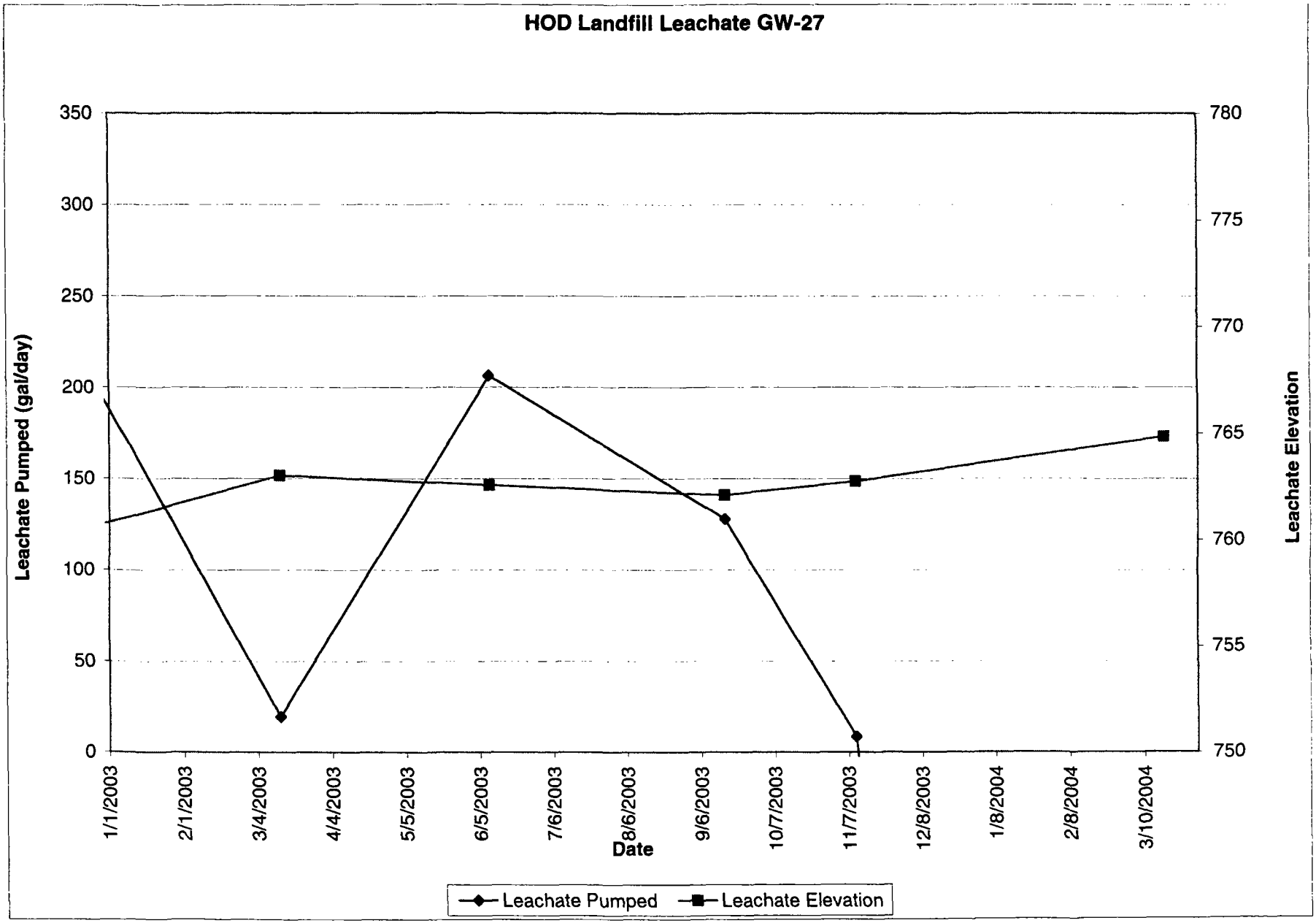
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

I:\WPMSN\PJT\00-05314\46\000531446-004.XLS 6/17/2004



Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

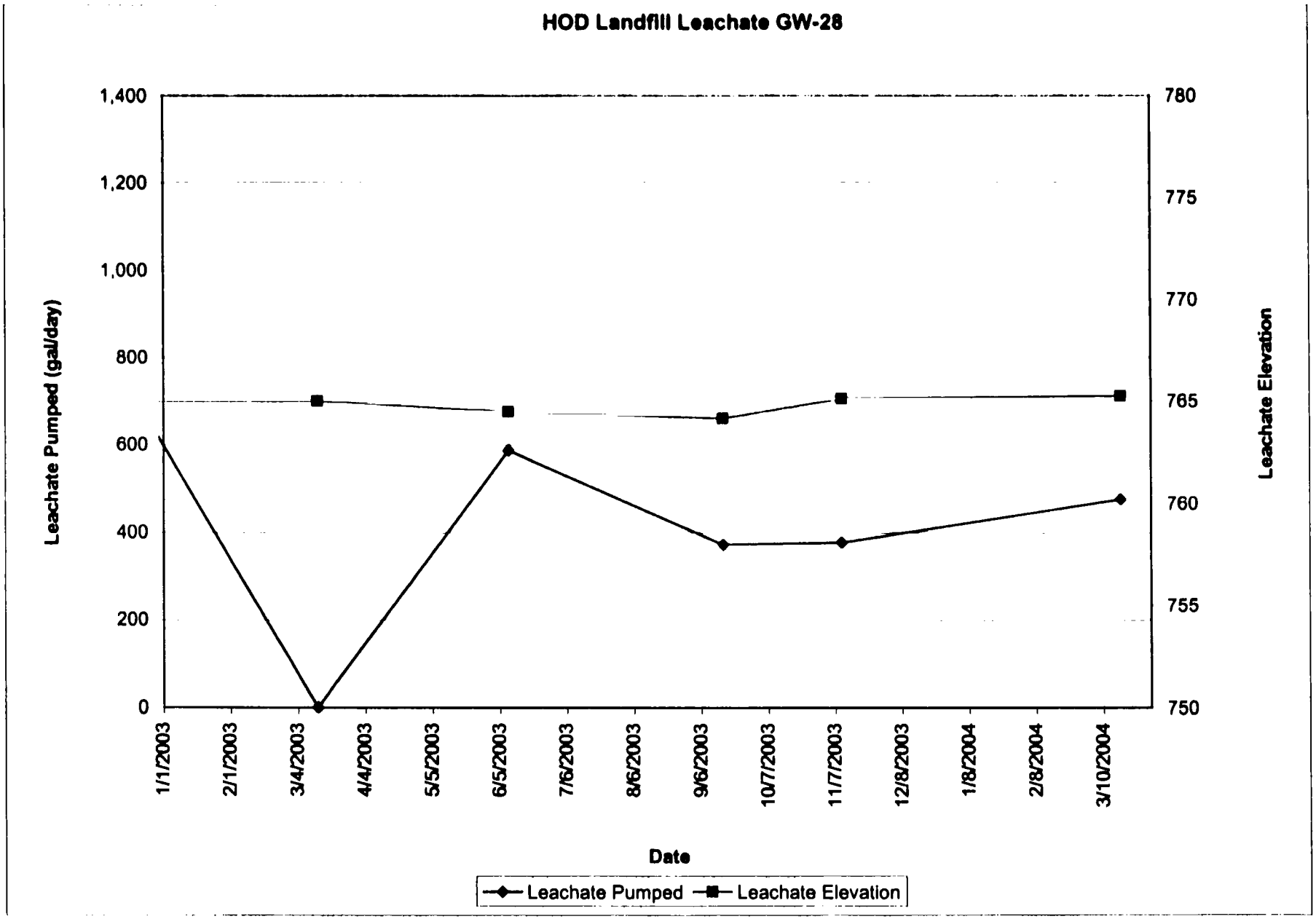
I:\WPMSN\PJT\00-05314\41\000531441-002.XLS 6/17/2004



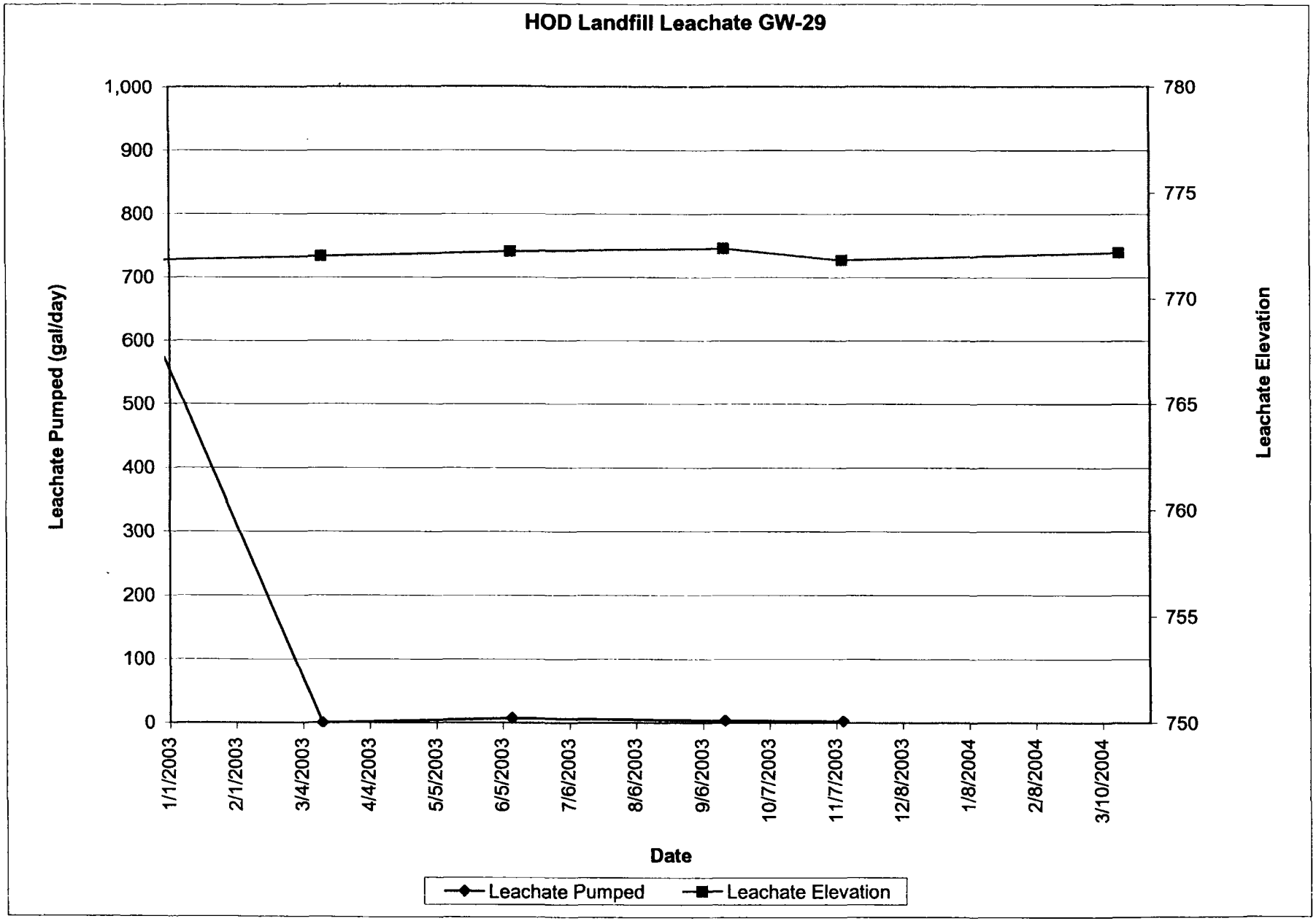
12

Note: Leachate levels after pump shut down for 48 hours (February, May, August 2003, and March 2004) and 7 days in November (2003).
Cycle counter replaced December 2003.

I:\WPMSN\PJT\00-05314\41\000531441-002.XLS 6/17/2004

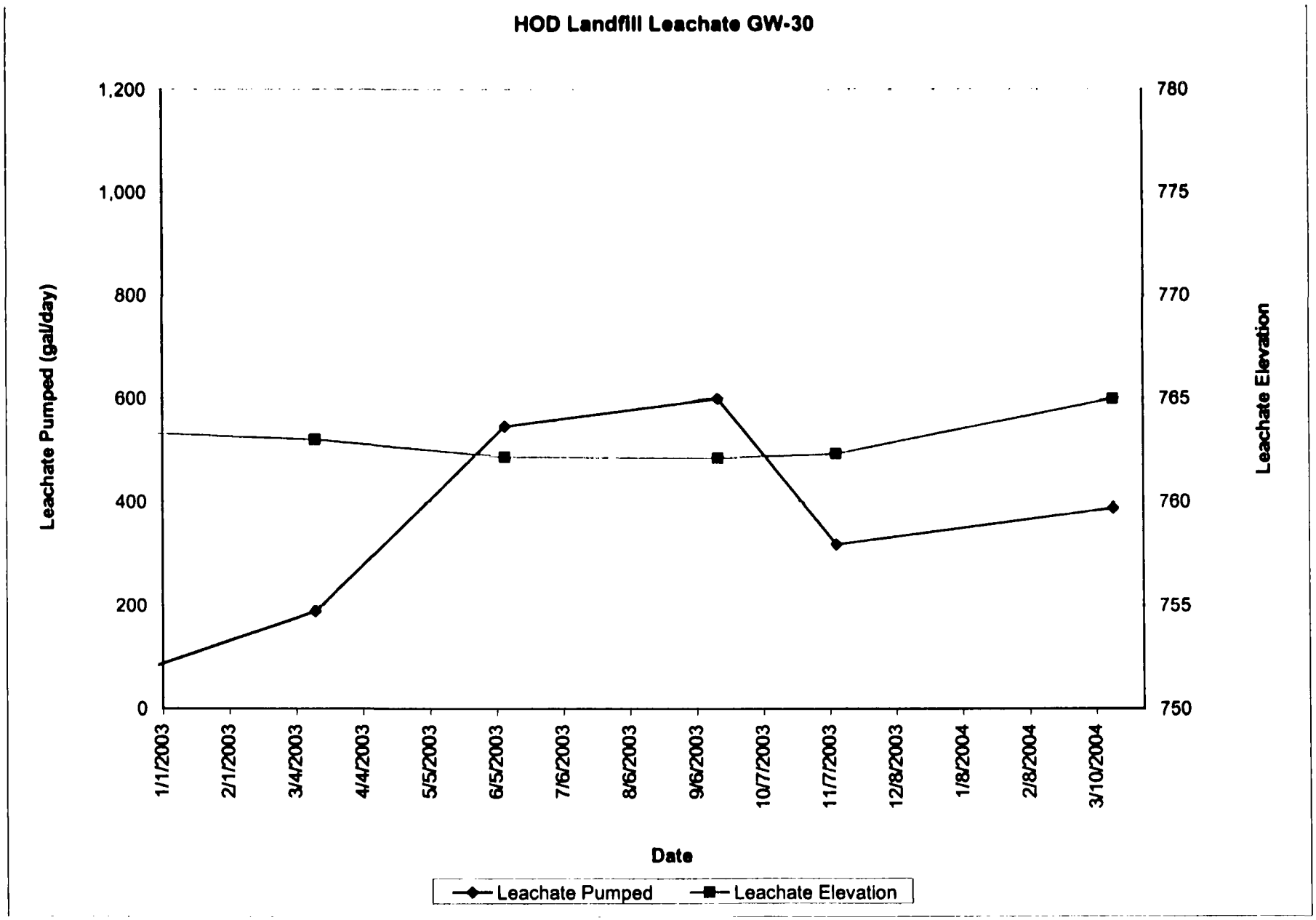


Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

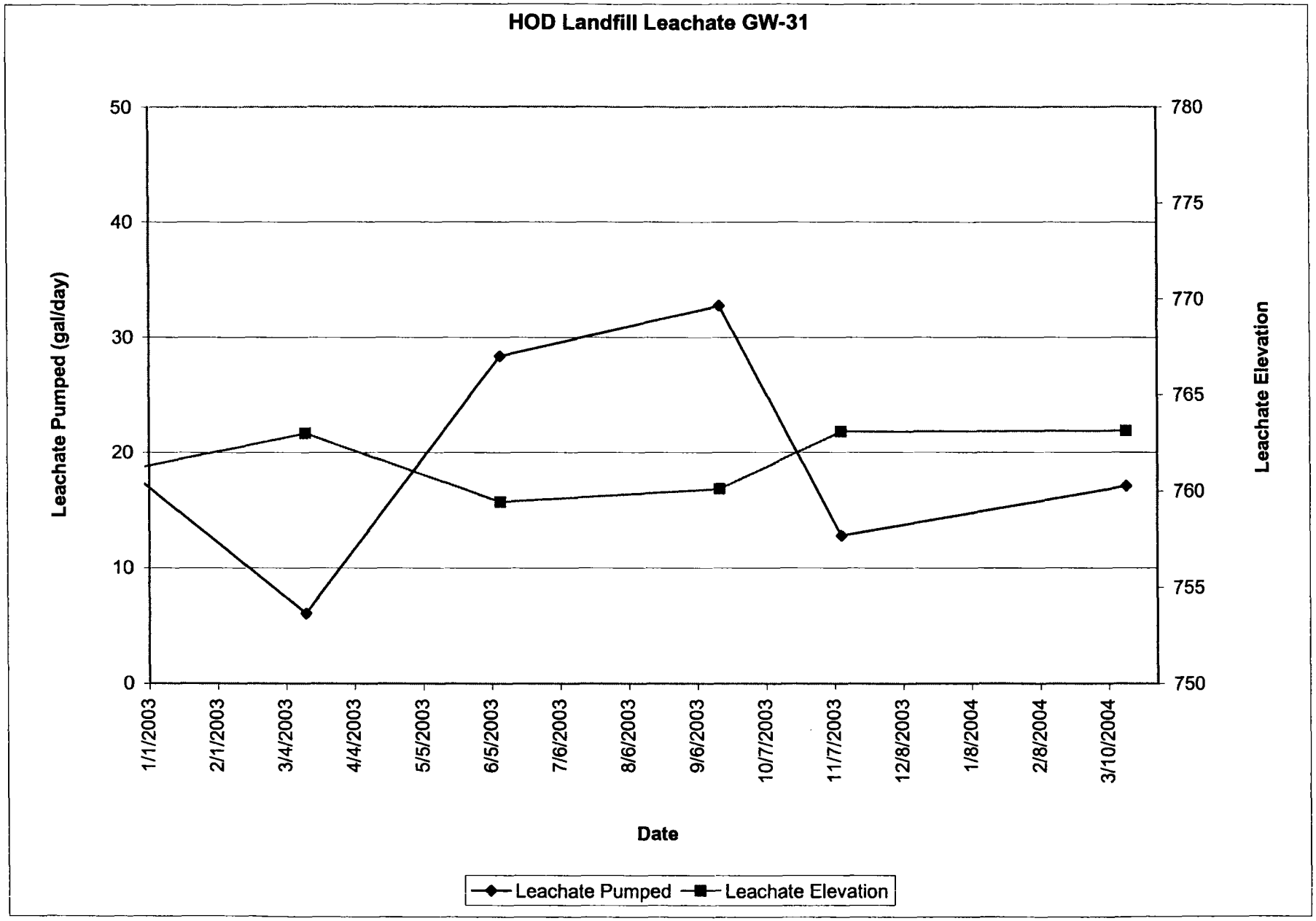


Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

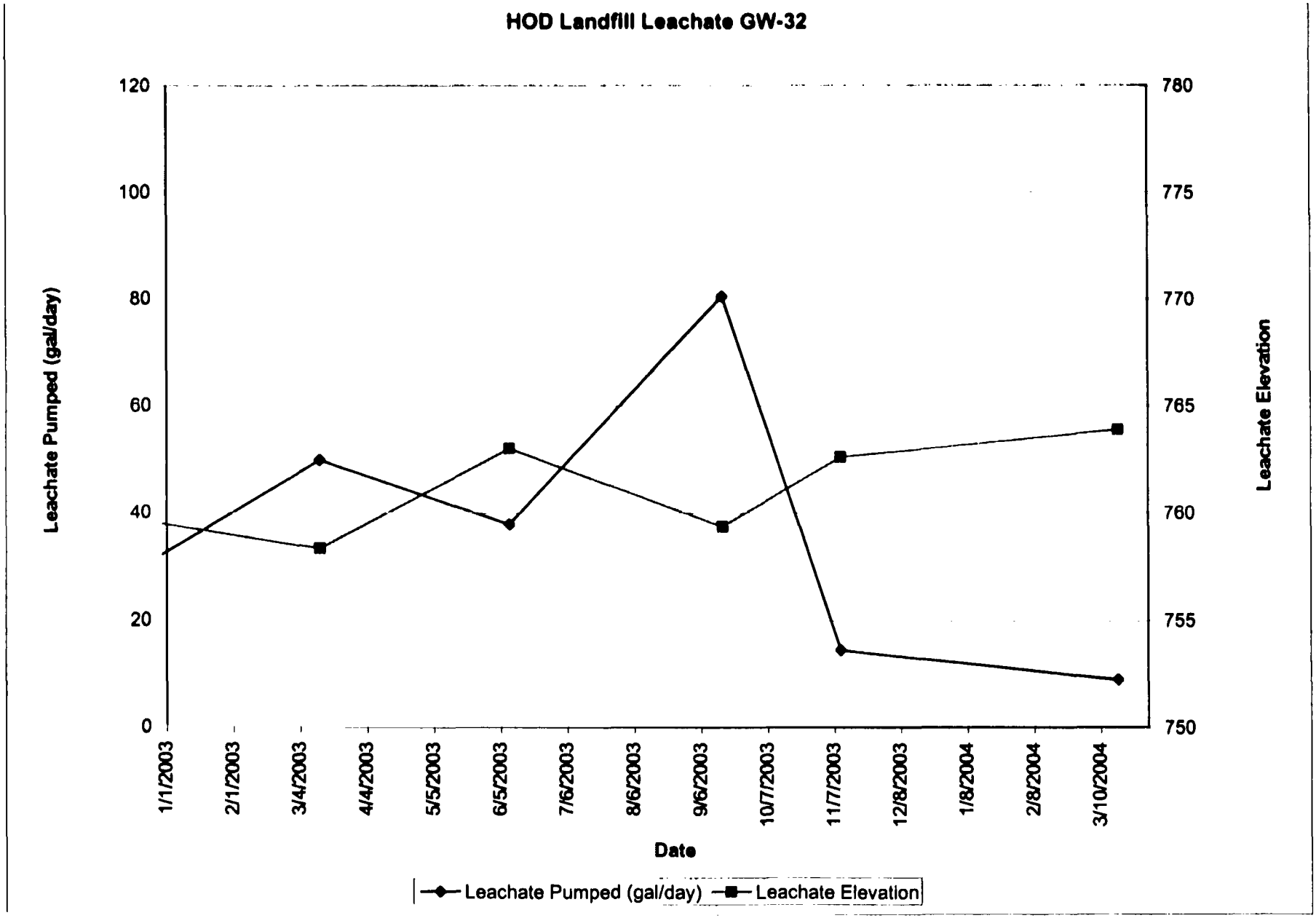
I:\WPMSN\PJT\00-05314\46\000531446-002.XLS 6/17/2004



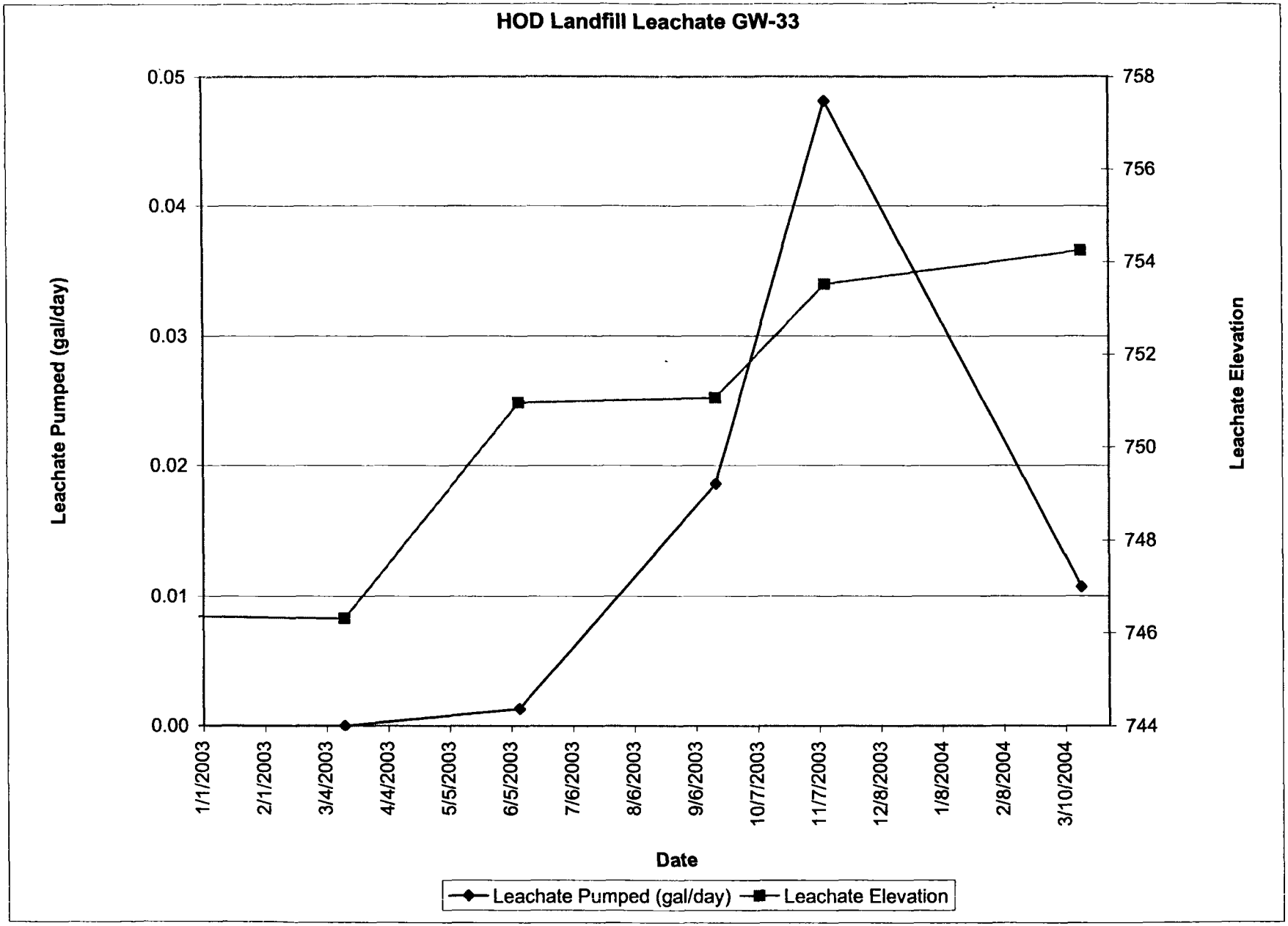
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



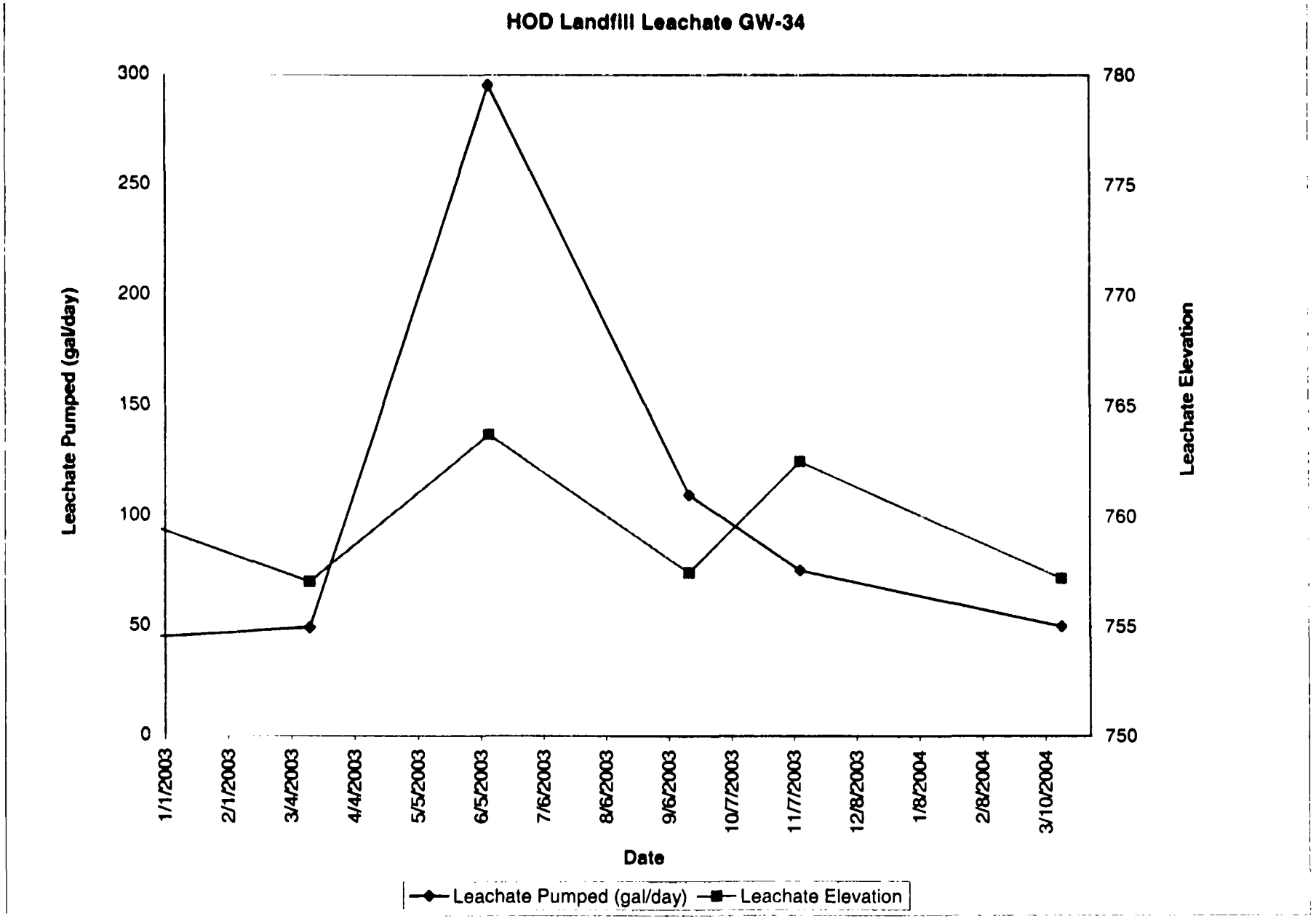
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



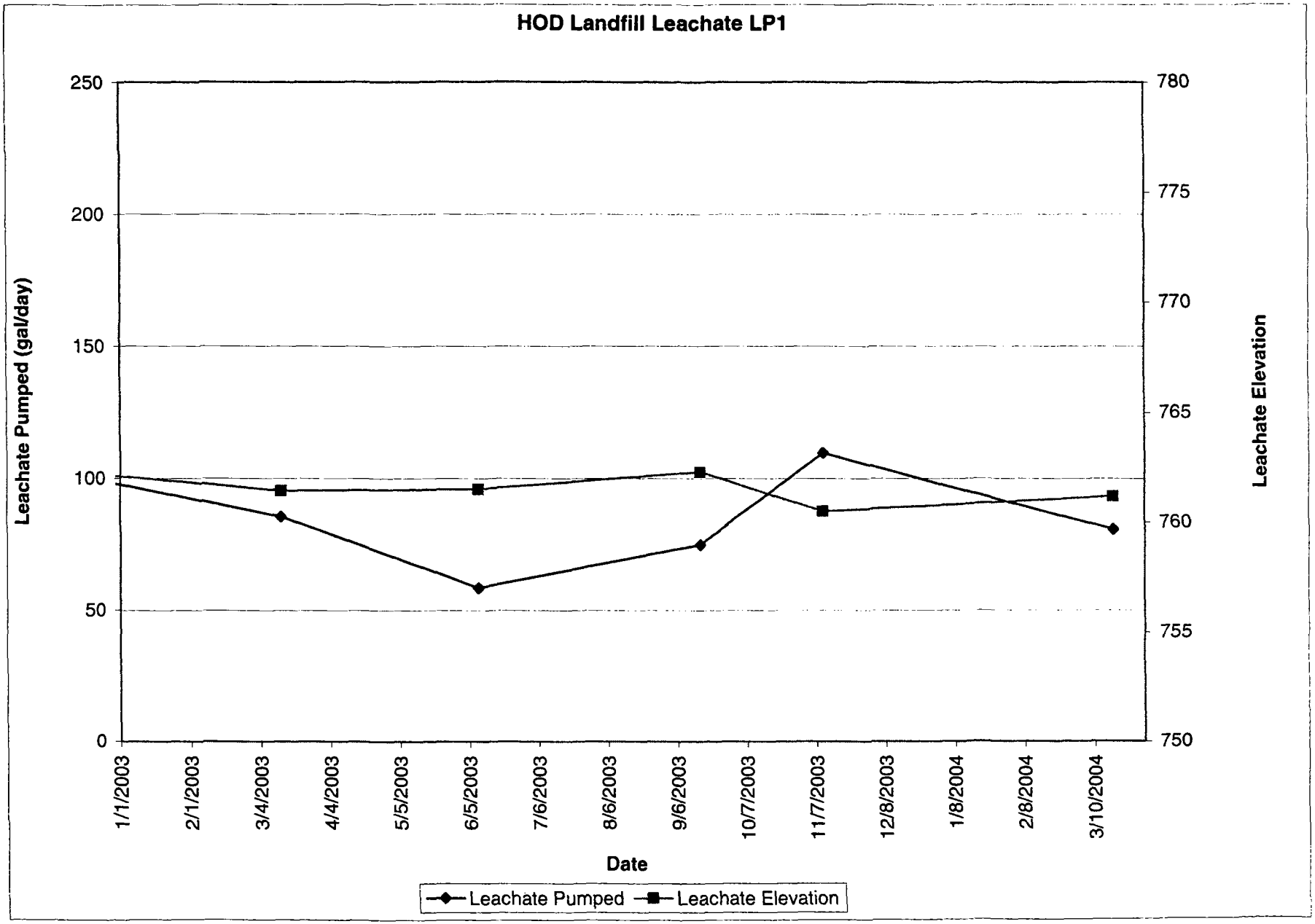
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



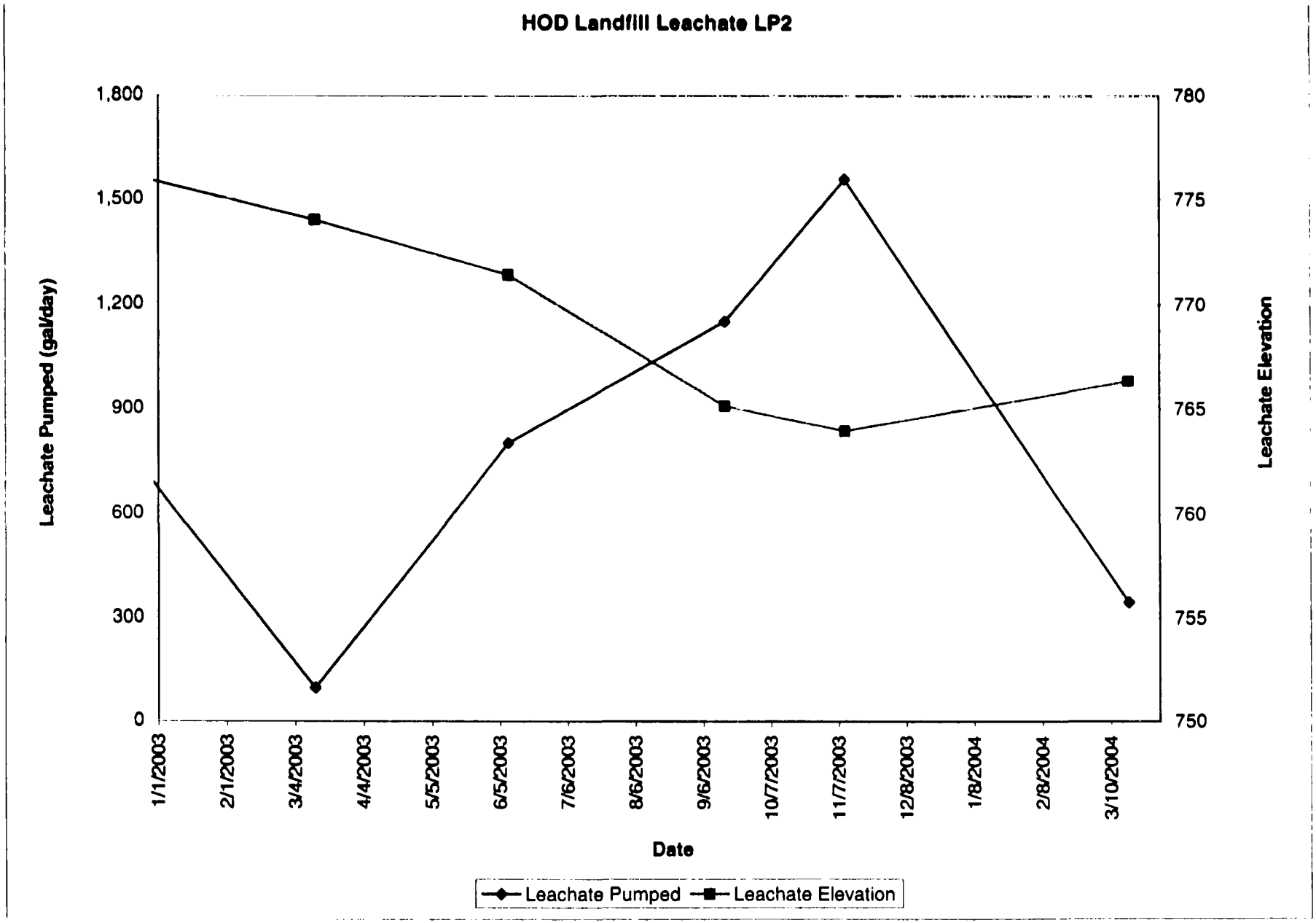
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



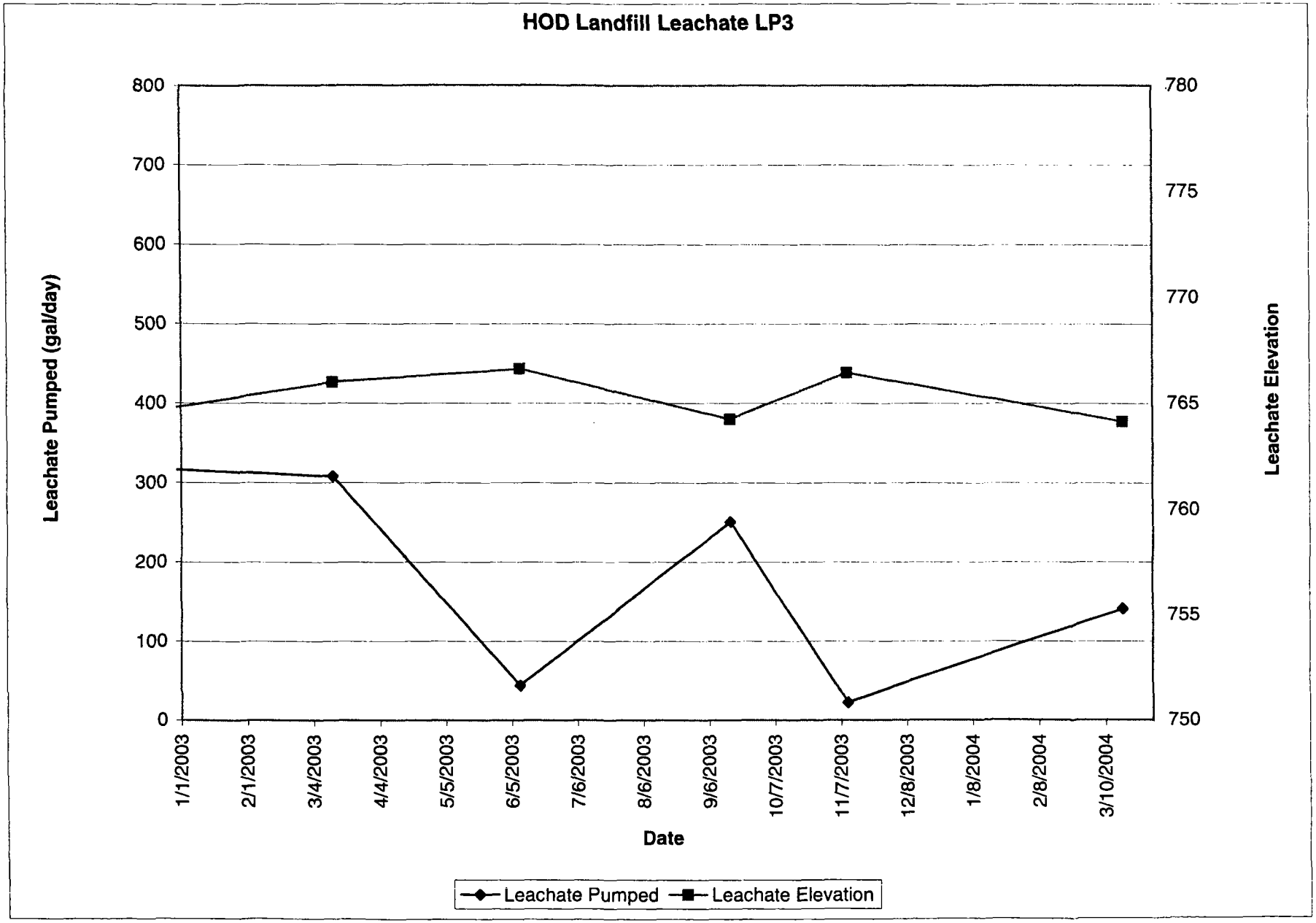
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



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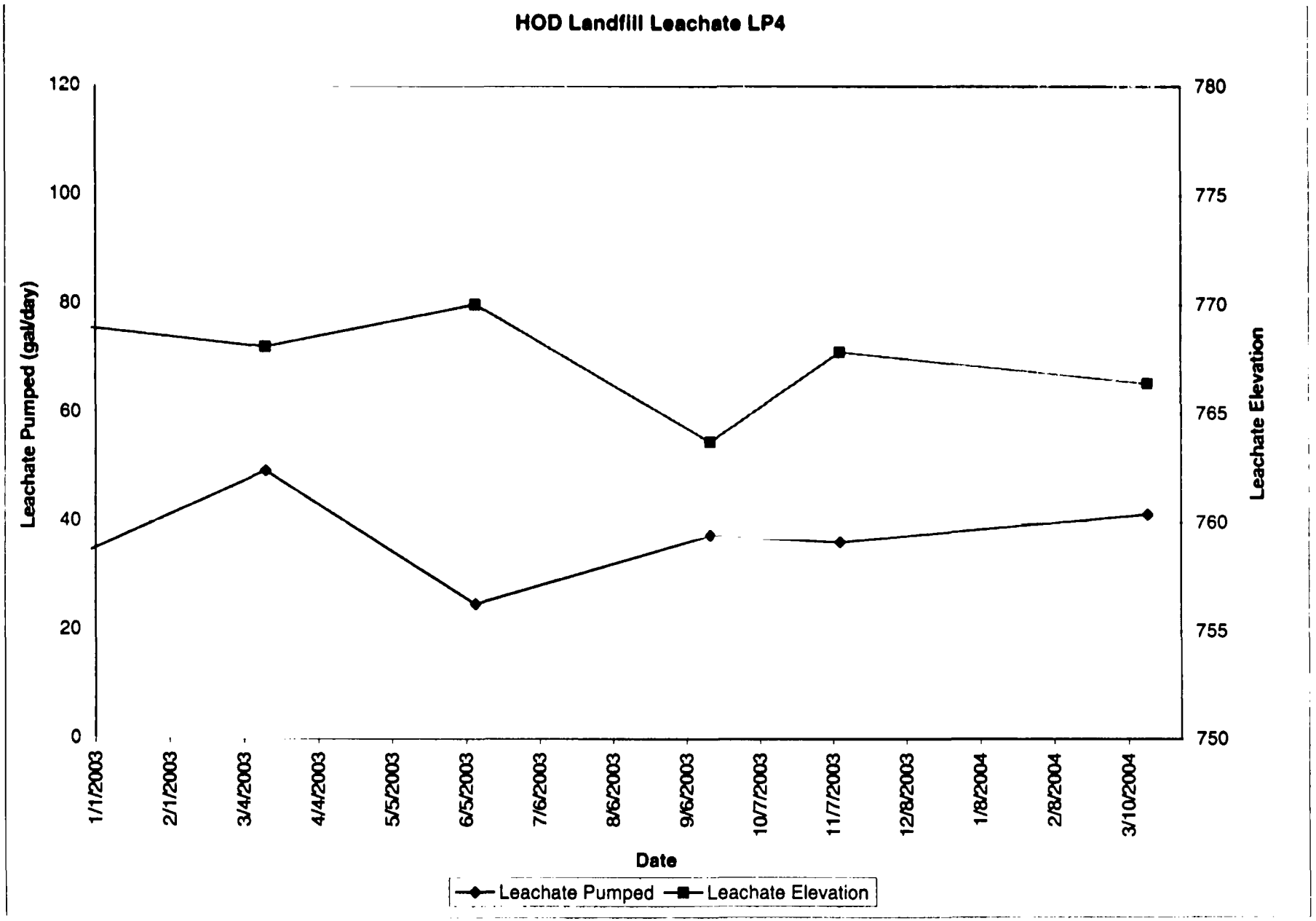
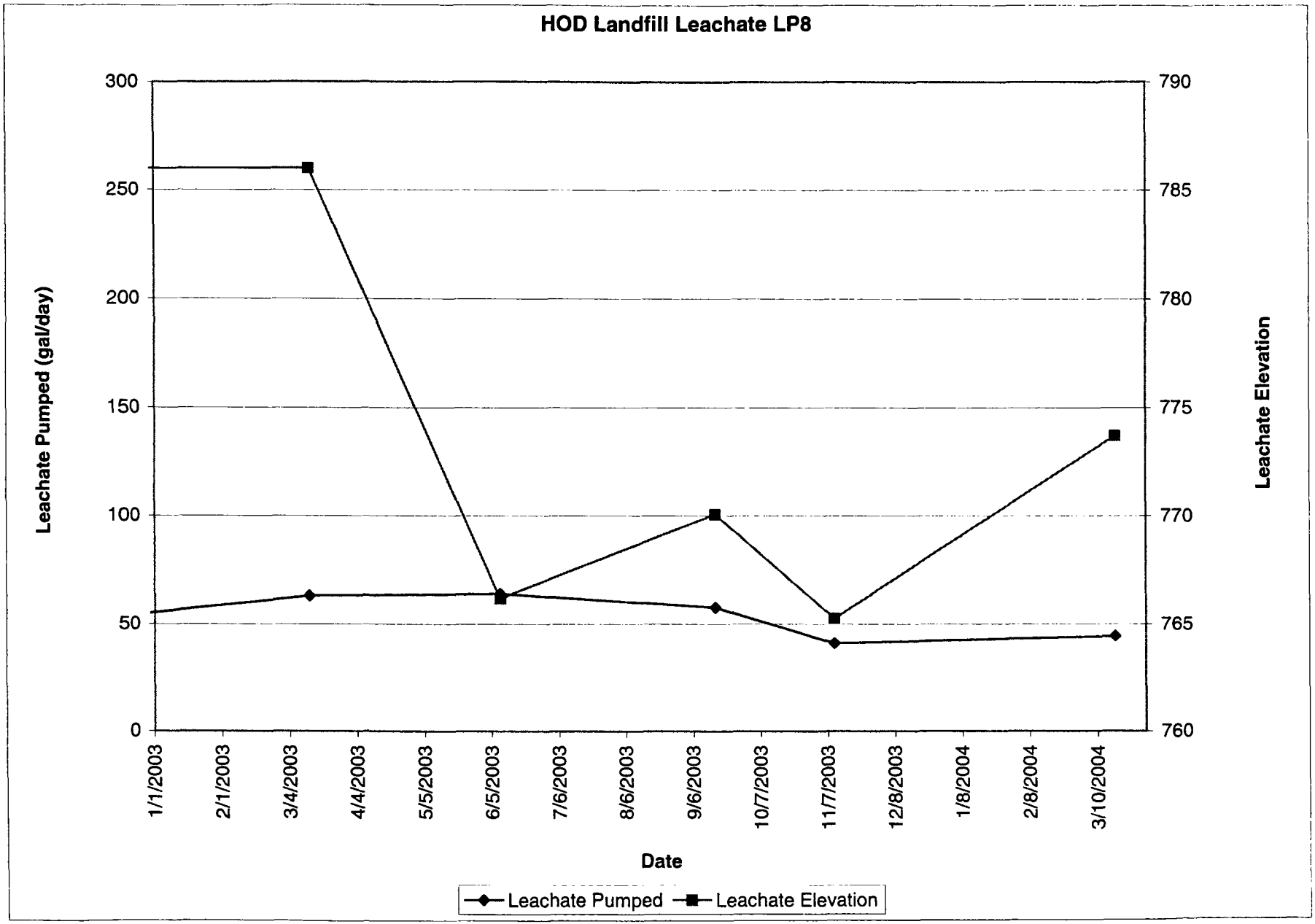
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



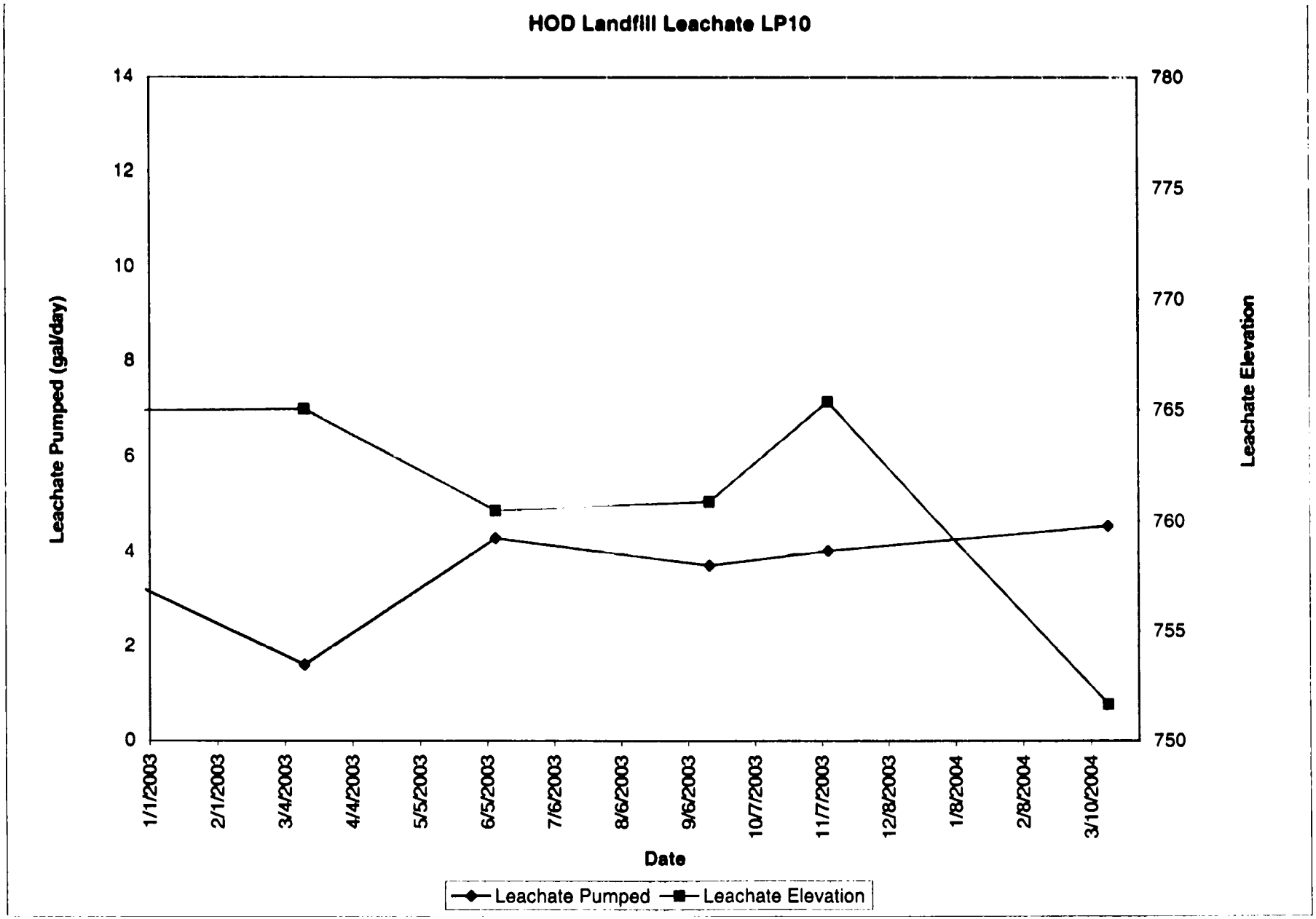
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

I:\WPMSN\PJT\00-05314\46\000531446-002.XLS 6/17/2004

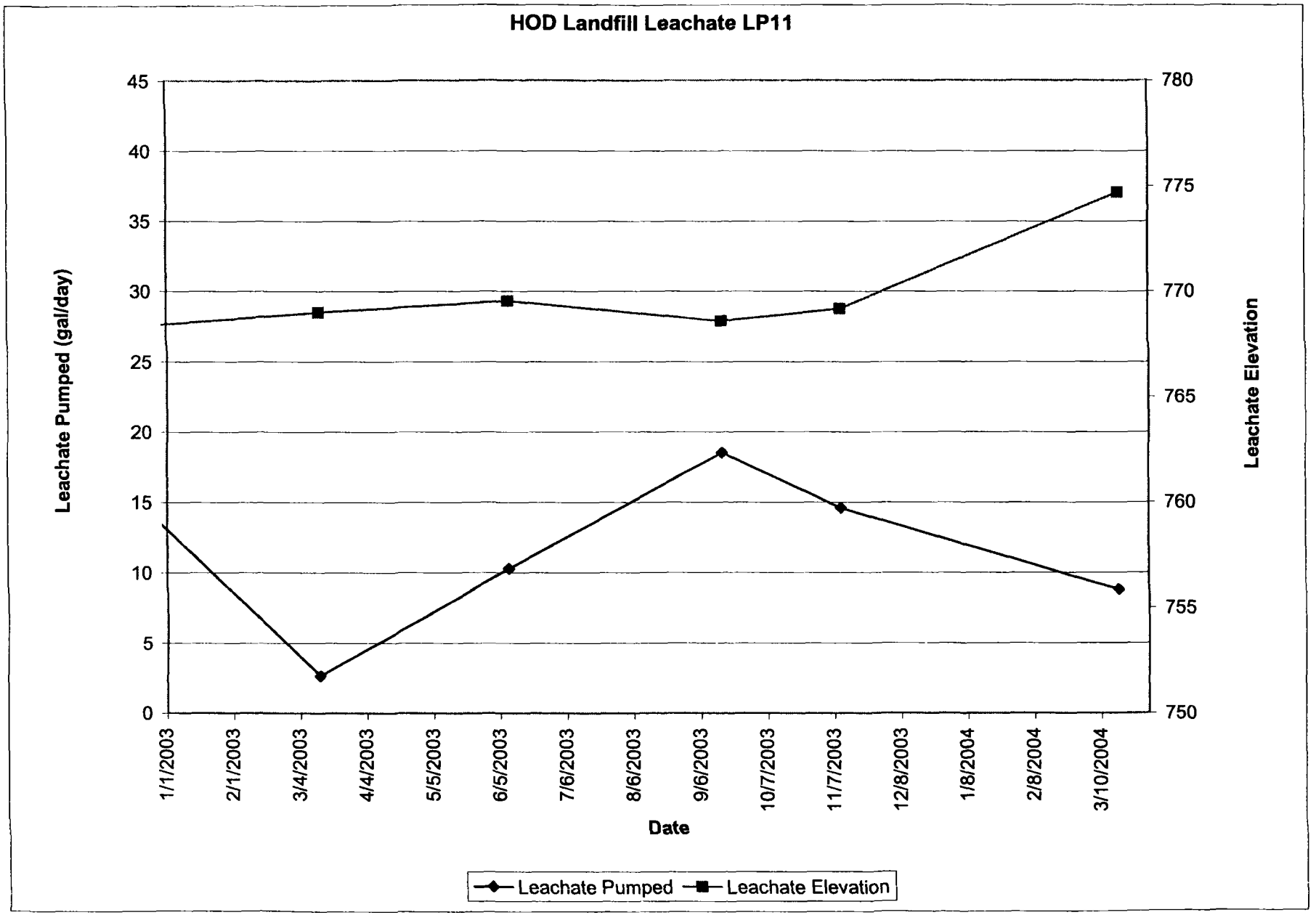


Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

I:\WPMSN\PJT\00-05314\46\000531446-002.XLS 6/17/2004

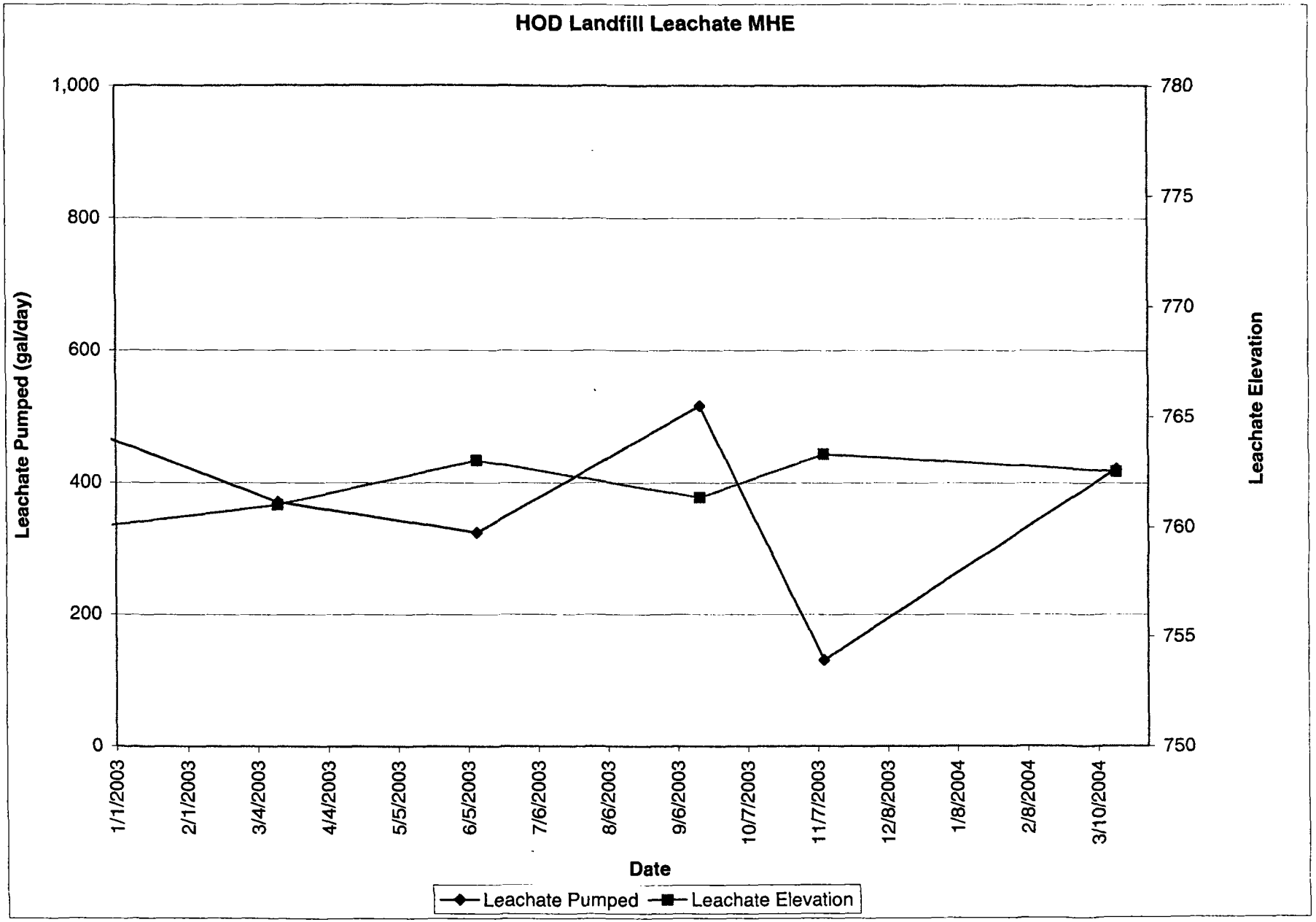


Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).



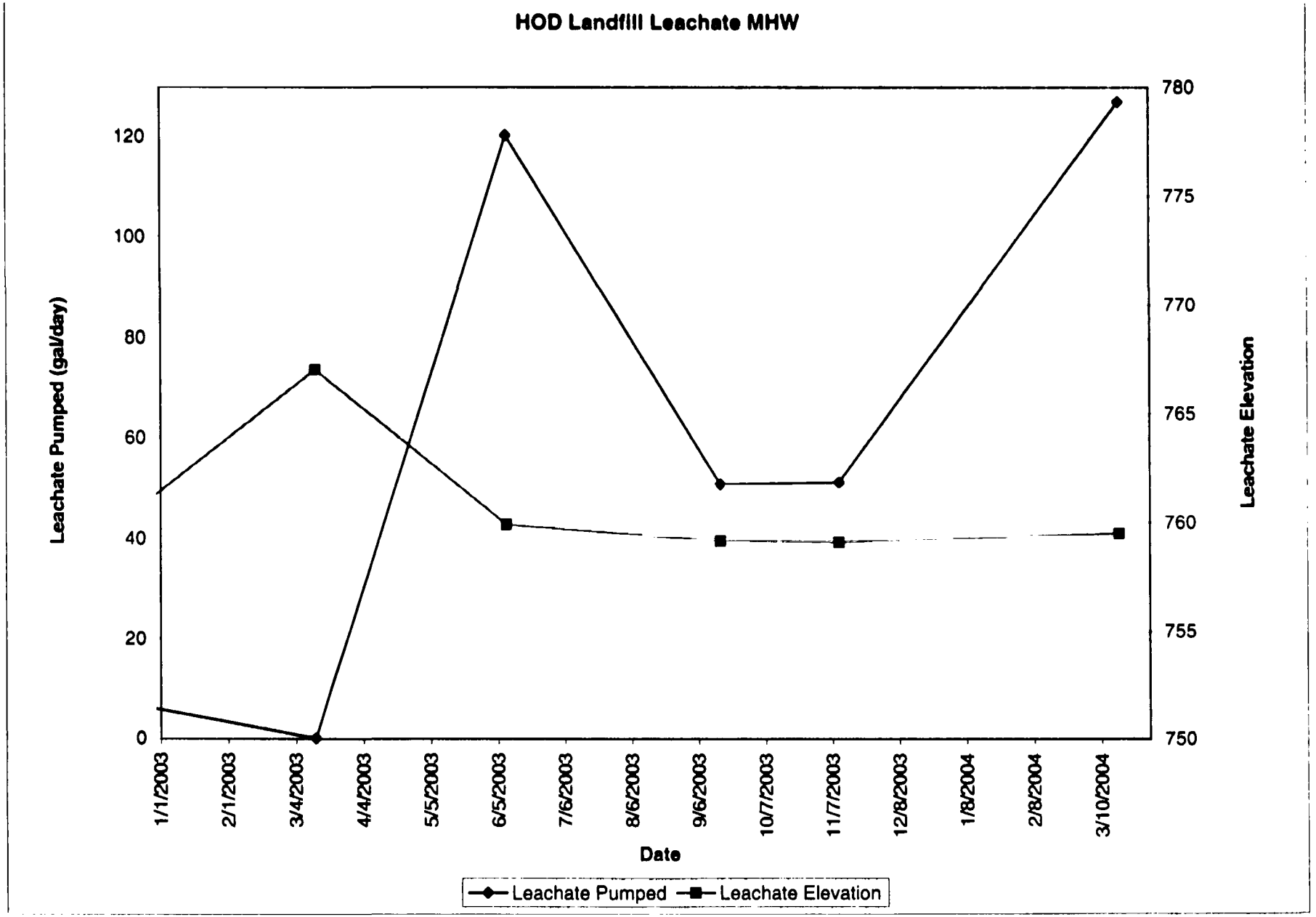
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

I:\WPMSN\PJT\00-05314\46\000531446-002.XLS 6/17/2004



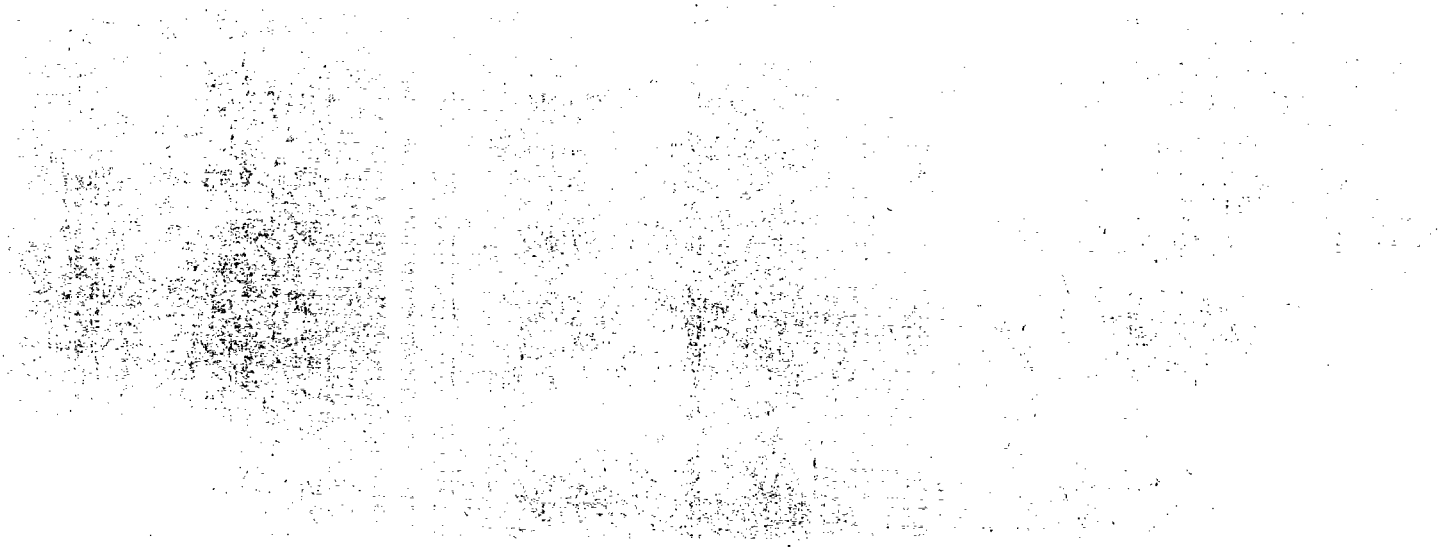
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

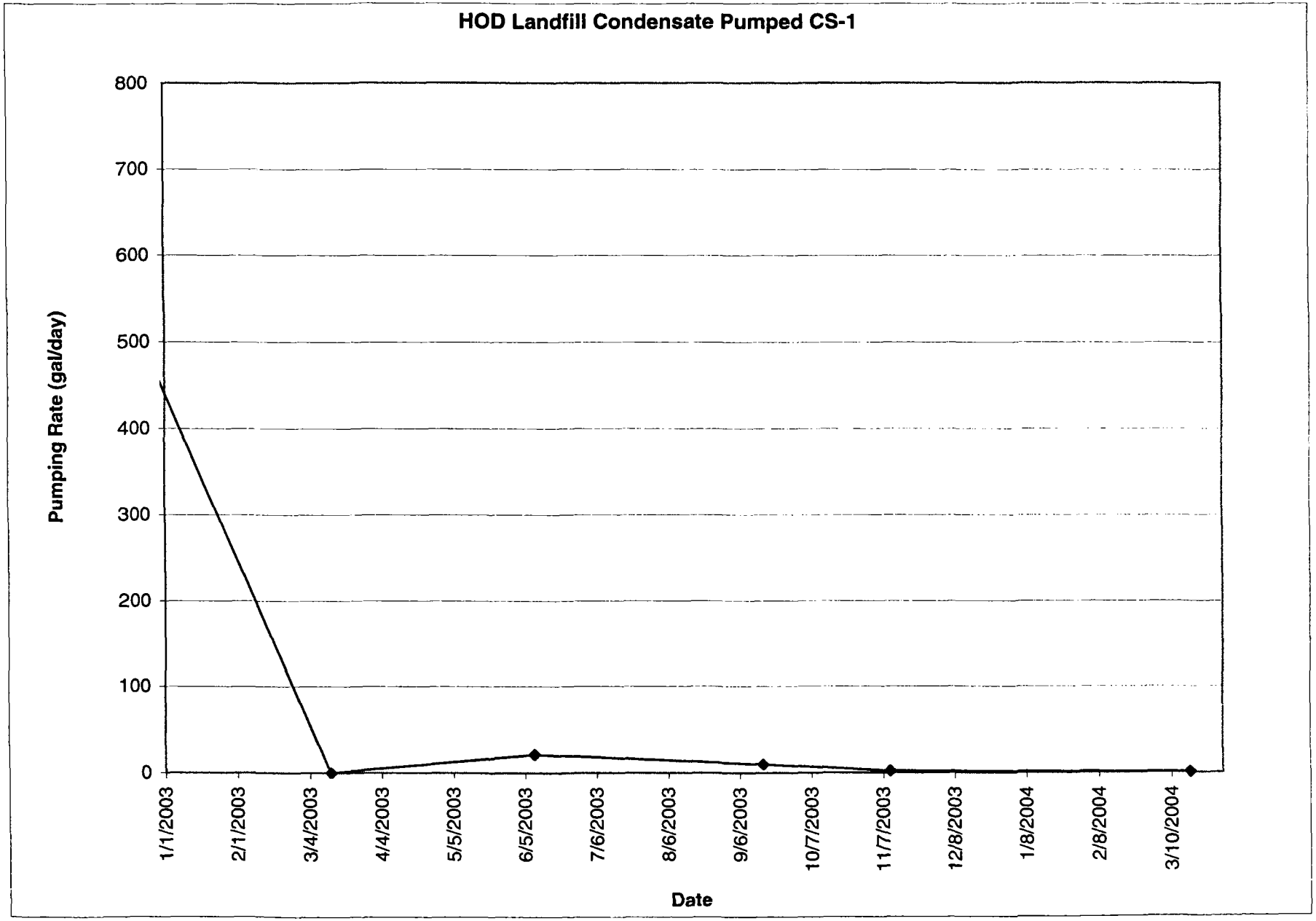
I:\WPMSN\PJT\00-05314\46\000531446-002.XLS 6/17/2004



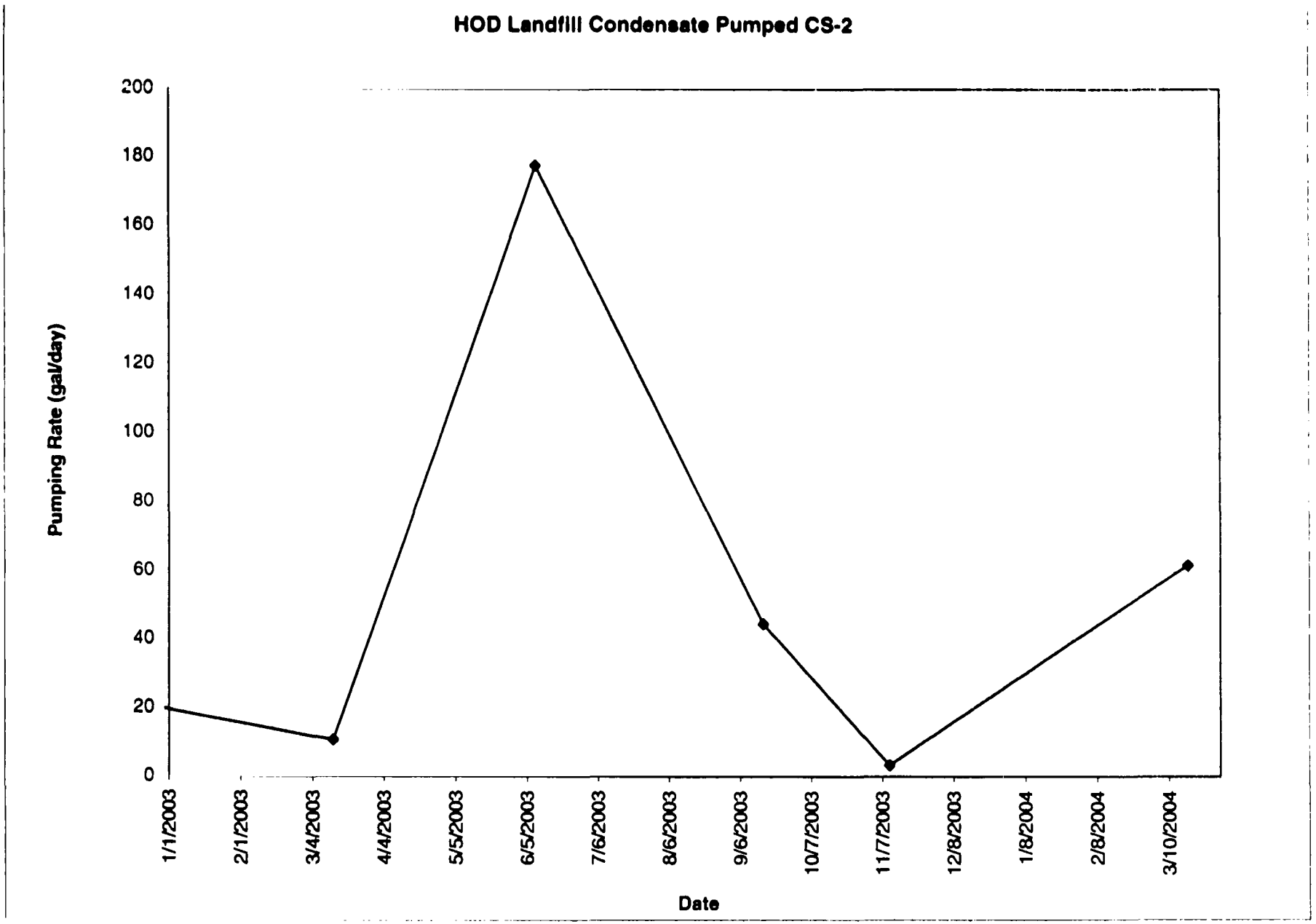
Note: Leachate levels are recorded after pumps have been shut down for 48 hours in (February, May, August 2003, and March 2004) and 7 days in November (2003).

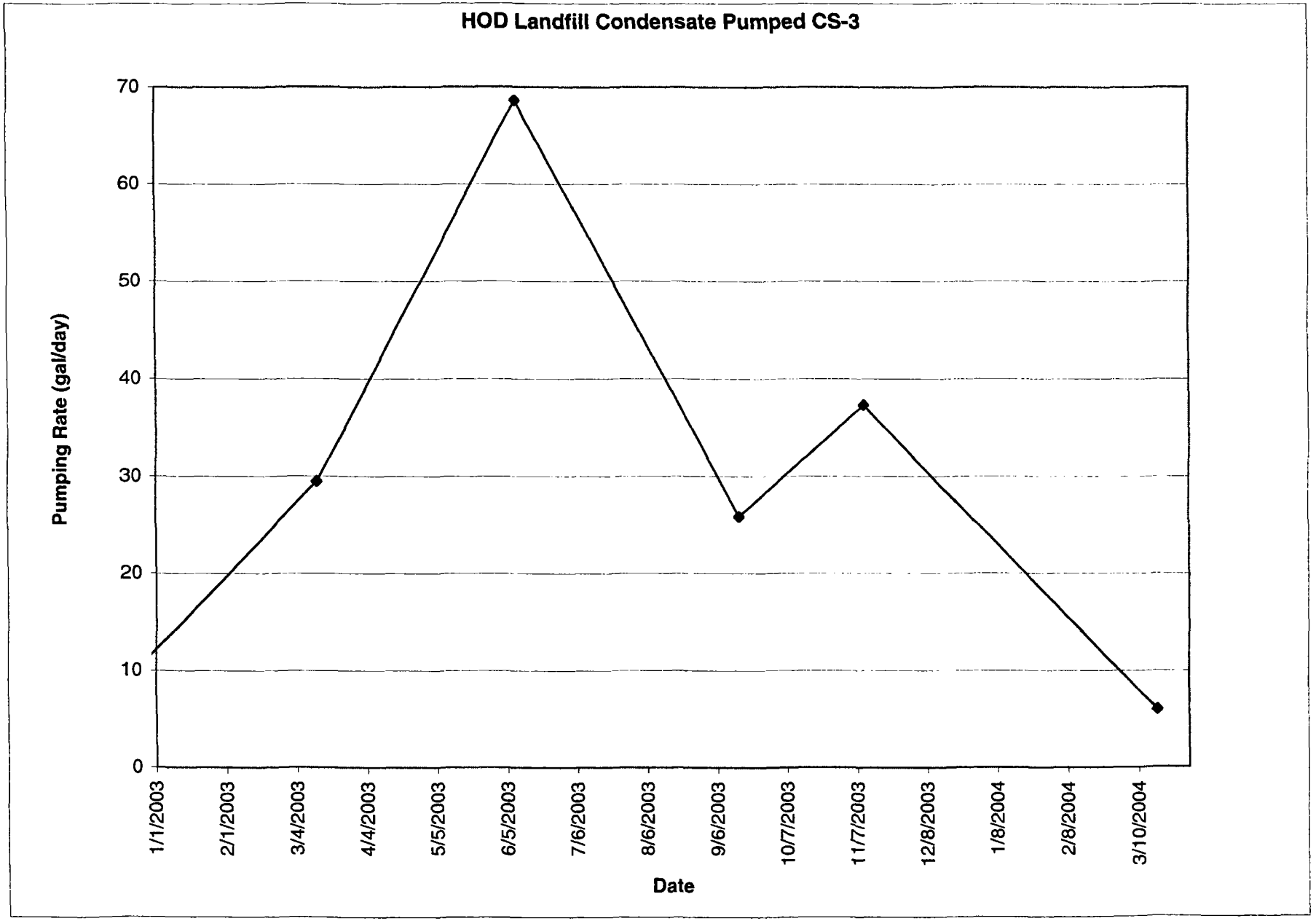
Condensate Sumps



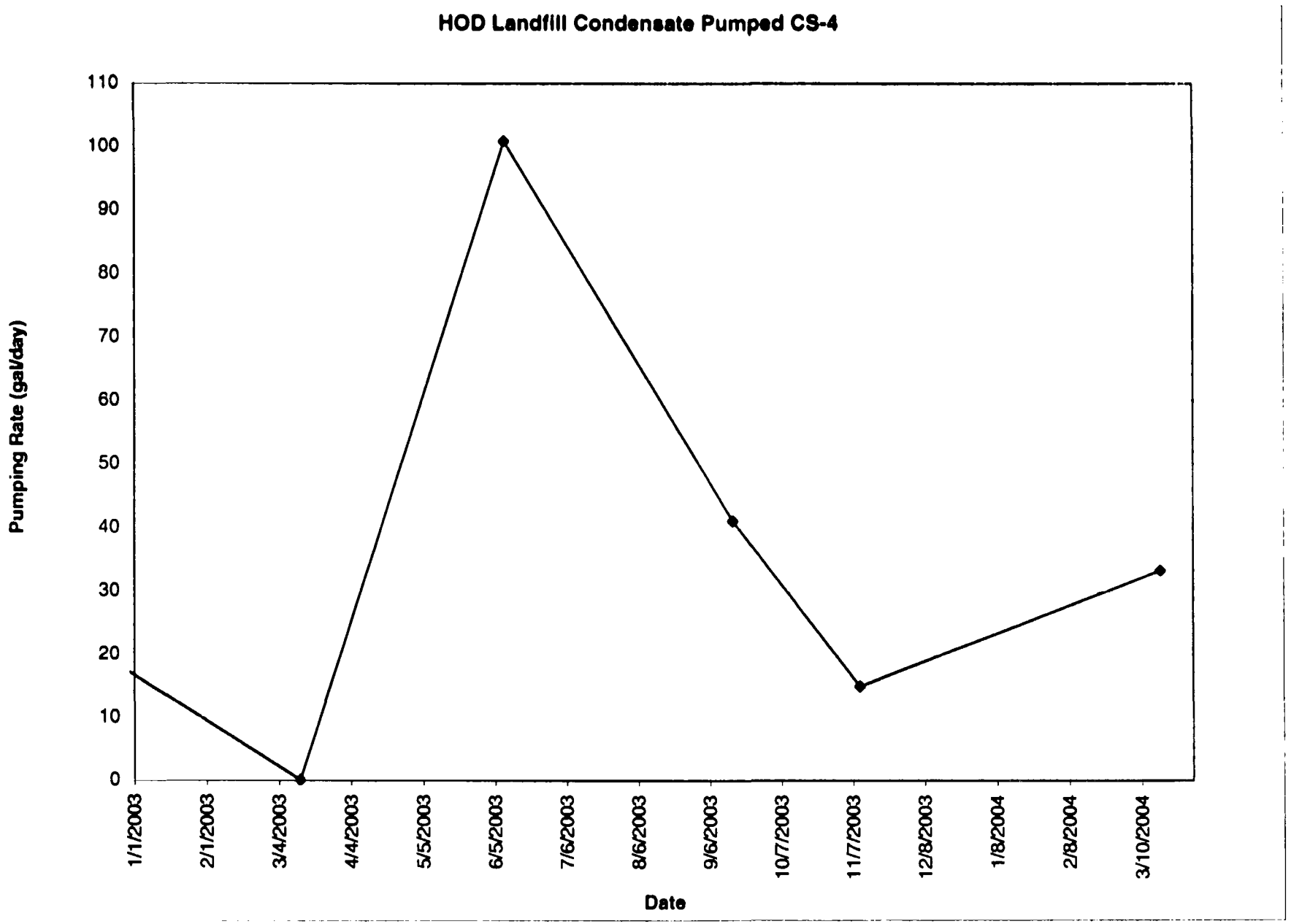


I:\WPMSN\PJT\00-05314\46\000531446-002.XLS 6/17/2004


HOD Landfill Condensate Pumped CS-2
Pumping Rate (gal/day)
200
180
160
140
120
100
80
60
40
20
0
1/1/2003
2/1/2003
3/4/2003
4/4/2003
5/5/2003
6/5/2003
7/6/2003
8/6/2003
9/6/2003
10/7/2003
11/7/2003
12/8/2003
1/8/2004
2/8/2004
3/10/2004
Date


HOD Landfill Condensate Pumped CS-3
Pumping Rate (gal/day)
70
60
50
40
30
20
10
0
1/1/2003
2/1/2003
3/4/2003
4/4/2003
5/5/2003
6/5/2003
7/6/2003
8/6/2003
9/6/2003
10/7/2003
11/7/2003
12/8/2003
1/8/2004
2/8/2004
3/10/2004
Date

42


HOD Landfill Condensate Pumped CS-4
Pumping Rate (gal/day)
110
100
90
80
70
60
50
40
30
20
10
0
1/1/2003
2/1/2003
3/4/2003
4/4/2003
5/5/2003
6/5/2003
7/6/2003
8/6/2003
9/6/2003
10/7/2003
11/7/2003
12/8/2003
1/8/2004
2/8/2004
3/10/2004
Date

44/44

Appendix E
Leachate Analytical Data

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	LCT-01 23-FEB-04 A4146001	LST-01 25-MAR-04 A4262301	LST-01 RE 25-MAR-04 A4262301RE
COLOR, FIELD		BROWN		
CONDUCTANCE, SPECIFIC	UMHOS/CM	6630		
OXYGEN, DISSOLVED	MG/L	2.0		
EH, FIELD	MV	112		
ODOR, FIELD		LEACHATE		
PH, FIELD	SU	7.74		
TEMPERATURE	DEG C	7.5		
TURBIDITY, FIELD		MOD		

1/4

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	LCT 01 23 FEB 04 A4146001		LST 01 25 MAR 04 A4262101	LST 01 RE 25 MAR 04 A4262101RE
BOD *	MG/L	99.9	hj	< 240	24.6
CHLORIDE	MG/L	1160			
COD	MG/L	504		198	
OIL AND GREASE	MG/L			< 10	
PHOSPHORUS, TOTAL	MG/L			0.22	
SOLIDS, TOTAL SUSPENDED	MG/L	125		60	
ARSENIC, TOTAL	UG/L			< 10	
CADMIUM, TOTAL	UG/L			< 5	
COPPER, TOTAL	UG/L			< 10	
IRON, TOTAL	UG/L	10500			
LEAD, TOTAL	UG/L			13.8	
MOLYBDENUM, TOTAL	UG/L			< 10	
MERCURY, TOTAL	UG/L			< 0.2	
NICKEL, TOTAL	UG/L			16.5	
SELENIUM, TOTAL	UG/L			< 5	
SILVER, TOTAL	UG/L			< 10	
ZINC, TOTAL	UG/L			91.9	

2

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	LCT-01 23-FEB-04 A4146001	
1,1-DICHLOROETHENE	UG/L	< 50	
CHLOROETHANE	UG/L	8.1	J
CIS-1,2-DICHLOROETHENE	UG/L	31	J
TETRACHLOROETHENE	UG/L	< 50	
TRANS-1,2-DICHLOROETHENE	UG/L	< 50	
TRICHLOROETHENE	UG/L	< 50	

W

Appendix F
Summary of Detected Constituents Exceeding Standards

TABLE 1
PARAMETERS THAT EXCEED
SITE-WIDE LEACHATE PROTECTION STANDARDS
HOD LANDFILL, WASTE MANAGEMENT CORPORATION

BEGINNING SEARCH DATE: 01-FEB-2004
ENDING SEARCH DATE: 01-MAR-2004

CHEMICAL PARAMETER	UNITS	STANDARDS	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS
BOD	MG/L	30	LCT-01	23-FEB-2004	99.9	hj
IRON, TOTAL	UG/L	2000	LCT-01	23-FEB-2004	10500	
SOLIDS, TOTAL SUSPENDED	MG/L	15	LCT-01	23-FEB-2004	125	

TABLE 2

PARAMETERS THAT EXCEED

SITE WIDE GROUNDWATER PROTECTION STANDARDS

HOD LANDFILL, WASTE MANAGEMENT CORPORATION

BEGINNING SEARCH DATE: 01 FEB 2004

ENDING SEARCH DATE: 01 MAR 2004

CHEMICAL PARAMETER	UNITS	STANDARDS	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS
CHLORIDE, DISSOLVED	MG/L	200	US 04S DUP	24 FEB 2004	210	
CIS-1,2 DICHLOROETHENE	UG/L	70	US 03D	24 FEB-2004	180	D
IRON, DISSOLVED	UG/L	5000	W 06S	26 FEB 2004	7940	
MANGANESE, DISSOLVED	UG/L	150	W 06S	26 FEB 2004	541	
			W 08D	25 FEB 2004	184	
SOLIDS, TOTAL DISSOLVED	MG/L	1200	W 06S	26 FEB 2004	1840	
SULFATE, DISSOLVED	MG/L	400	W 06S	26 FEB 2004	851	
VINYL CHLORIDE	UG/L	2	US-03D	24-FEB-2004	14	J
			US-04S DUP	24 FEB-2004	2	

TABLE 3
PARAMETERS THAT EXCEED
SITE-WIDE SURFACE WATER PROTECTION STANDARDS
HOD LANDFILL, WASTE MANAGEMENT CORPORATION

BEGINNING SEARCH DATE: 01-FEB-2004
ENDING SEARCH DATE: 01-APR-2004

CHEMICAL PARAMETER	UNITS	STANDARDS	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS

TABLE 4

PARAMETERS THAT EXCEED

SITE WIDE PUBLIC WATER PROTECTION STANDARDS

HOD LANDFILL, WASTE MANAGEMENT CORPORATION

BEGINNING SEARCH DATE: 01 FEB 2004

ENDING SEARCH DATE: 01 APR 2004

CHEMICAL PARAMETER	UNITS	STANDARDS	SAMPLE IDENTIFIER	SAMPLE DATE	RESULT	DATA FLAGS
IRON, DISSOLVED	UG/L	1000	G 102	24 FEB 2004	1740	
			PZ-03U	25 FEB 2004	1510	
			PZ 04U	25 FEB 2004	2170	
			US 03D	24 FEB 2004	3300	
			US 04S	24 FEB 2004	1310	
			US 04S DUP	24 FEB 2004	1110	
			US 06S	26 FEB 2004	1460	
			W 03D	25 FEB 2004	2180	
			W-06S	26 FEB 2004	7940	
			W 08D	25 FEB 2004	1840	
SOLIDS, TOTAL DISSOLVED	MG/L	1000	W-06S	26 FEB 2004	1840	

4/4

Appendix G
Groundwater Analytical Data

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	G-014S 23-FEB-04 A415-X01	G-102 24-FEB-04 A4148802	PZ-01U 23-FEB-04 A415-X02	PZ-02U 23-FEB-04 A415-X03	PZ-03U 25-FEB-04 A4154001	PZ-04U 25-FEB-04 A4154002
COLOR, FIELD			NONE			YELLOW	NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM		1462			893	894
DEPTH TO WATER	FEET	5.94	11.17	62.80		3.60	3.68
OXYGEN, DISSOLVED	MG/L		0.3			0.6	0.6
EH, FIELD	MV		-99			-58	-37
ODOR, FIELD			NONE				SL LEACH
PH, FIELD	SU		7.06			7.27	7.25
TEMPERATURE	DEG C		10.6			9.5	9.1
TURBIDITY, FIELD			NONE			NONE	NONE
WATER ELEVATION	FEET	764.40	762.36	703.61		762.67	762.81
WELL NOT SAMPLED				00000	00000		

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	PZ 05U 23 FEB 04 A415 X04	PZ 06U 23 FEB 04 A415 X05	R 001D 25 FEB 04 A4154301	UR 01D 25 FEB 04 A4154302	UR 01R 23 FEB 04 A415 X06	UR 02D 24 FEB 04 A4148402
COLOR, FIELD				LT GREY	NONE		NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM			563	624		595
DEPTH TO WATER	FEET	8.27	4.03	49.41	44.30	4.36	42.29
OXYGEN, DISSOLVED	MG/L			0.4	0.2		0.2
EH, FIELD	MV			85	142		110
ODOR, FIELD				NONE	SL LEACH		NONE
PH, FIELD	SU			7.72	7.84		7.84
TEMPERATURE	DEG C			10.9	10.4		10.0
TURBIDITY, FIELD				MOD	NONE		NONE
WATER ELEVATION	FEET	762.84	762.51	725.27	724.58	764.11	728.44

WELL NOT SAMPLED

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	US-03D 24-FEB-04 A4148403	US-03I 23-FEB-04 A415-X07	US-03S 23-FEB-04 A415-X08	US-04D 24-FEB-04 A4148404	US-04D DUP 24-FEB-04 A4148401	US-04S 24-FEB-04 A4148803
COLOR, FIELD		YELLOW			NONE		NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM	1104			504		1428
DEPTH TO WATER	FEET	45.56	41.32	8.54	48.42		11.33
OXYGEN, DISSOLVED	MG/L	0.1			0.8		0.6
EH, FIELD	MV	-87			16		-46
ODOR, FIELD		NONE			SL LEACH		SL LEACH
PH, FIELD	SU	7.49			7.95		7.0
TEMPERATURE	DEG C	10.1			10.3		10.2
TURBIDITY, FIELD		SLIGHT			NONE		NONE
WATER ELEVATION	FEET	724.16	728.61	761.94	724.28		762.34

WELL NOT SAMPLED

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	UB 04B DUP 24 FEB 04 A4148801	UB 05D 26 FEB 04 A4159102	UB 06D 26 FEB 04 A4159103	UB 06I 23 FEB 04 A415 X09	UB 06S 26 FEB 04 A4159001	VW 03 26 FEB 04 A4159201
COLOR, FIELD			NONE	NONE		NONE	NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM		470	571		886	
DEPTH TO WATER	FEET		43.20	45.69	26.04	7.40	
OXYGEN, DISSOLVED	MG/L		0.2	0.2		0.2	
EH, FIELD	MV		117	167		91	
ODOR, FIELD						SL LEACH	NONE
PH, FIELD	SU		8.24	7.96		7.12	
TEMPERATURE	DEG C		10.1	10.4		10.1	
TURBIDITY, FIELD			NONE	NONE		NONE	NONE
WATER ELEVATION	FEET		724.51	724.40	744.17	762.50	

WELL NOT SAMPLED

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	W-02D 23-FEB-04 A415-X10	W-03D 25-FEB-04 A4154303	W-03SA 24-FEB-04 A415-X11	W-03SB 24-FEB-04 A415-X12	W-04S 23-FEB-04 A415-X13	W-05S 23-FEB-04 A415-X14
COLOR, FIELD			NONE				
CONDUCTANCE, SPECIFIC	UMHOS/CM		1223				
DEPTH TO WATER	FEET	48.21	41.49	4.12	4.31	8.10	10.97
OXYGEN, DISSOLVED	MG/L		0.4				
EH, FIELD	MV		-76				
ODOR, FIELD			NONE				
PH, FIELD	SU		7.50				
TEMPERATURE	DEG C		9.8				
TURBIDITY, FIELD			NONE				
WATER ELEVATION	FEET	724.83	724.44	762.42	762.50	761.87	762.52

WELL NOT SAMPLED

57

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	W 06S 26 FEB 04 A4159002	W 08D 25 FEB 04 A4154304
COLOR, FIELD		YELLOW	NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM	2320	943
DEPTH TO WATER	FEET	4.75	43.51
OXYGEN, DISSOLVED	MG/L	0.4	0.03
EH, FIELD	MV	81	72
ODOR, FIELD		SL LEACH	NONE
PH, FIELD	SU	6.92	7.32
TEMPERATURE	DEG C	8.8	10.1
TURBIDITY, FIELD		SLIGHT	NONE
WATER ELEVATION	FEET	762.66	724.63

WELL NOT SAMPLED

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	G-102 24-FEB-04 A4148802	PZ-03U 25-FEB-04 A4154001	PZ-04U 25-FEB-04 A4154002	R-001D 25-FEB-04 A4154301	US-01D 25-FEB-04 A4154302	US-02D 24-FEB-04 A4148402
ALKALINITY AS CACO3	MG/L				292	263	236
BOD	MG/L				< 2	< 2	< 2
CHLORIDE, DISSOLVED	MG/L	187	72.6	81	10.1	22.4	6.1
CYANIDE, DISSOLVED	MG/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
FLUORIDE, TOTAL	MG/L	< 0.5	< 0.5	< 0.5	0.88	0.69	0.58
GROSS BETA	PCI/L	< 3.8	< 3	< 1.9	< 2.6	< 1.6	2.6
HARDNESS AS CACO3	MG/L	582	430	413	234	249	244
NITROGEN, AMMONIA	MG/L				0.29	0.64	1.2
NITROGEN, NITRATE	MG/L				< 2	< 2	< 2
NITROGEN, NITRATE, DISSOLVED	MG/L	< 2	< 2	< 2	< 2	< 2	< 2
NITROGEN, NITRITE	MG/L				< 0.05	< 0.05	< 0.05
NITROGEN, TOTAL KJELDAHL	MG/L				0.44	0.69	1.3
PHENOLICS, TOTAL RECOVERABLE	MG/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005 j
PHOSPHORUS, ORTHO	MG/L				0.099	0.062	0.14
RADIUM - 226, DISSOLVED	PCI/L	1.6	0.44	0.64	0.2	0.31	0.21
RADIUM - 228, DISSOLVED	PCI/L	< 0.82	< 0.34	< 0.7	< 0.19	< 0.11	< 0.5
SOLIDS, TOTAL DISSOLVED	MG/L	833	519	499	323	382	364
STRONTIUM, DISSOLVED	PCI/L	< 0.58	< 0.35	< 0.005	< -0.15	< 0.05	< 0.11
SULFATE	MG/L				102	62.5	97.4
SULFATE, DISSOLVED	MG/L	113	13.2	11.9	51.2	60.7	99.2
SULFIDE, TOTAL	MG/L				< 1	< 1	< 1
TOTAL ORGANIC CARBON AS NPOC	MG/L				2.1	2.2	2.8
TRITIUM	PCI/L	< 140	< 180	< 130	< 20	< 70	50
ANTIMONY, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ARSENIC, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
BARIUM, DISSOLVED	UG/L	201	< 200 N	< 200 N	< 200 N	< 200 N	< 200 N
BERYLLIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
BORON, DISSOLVED	UG/L	277	< 100 N	< 100 N	325	354	329
CADMIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
CALCIUM, DISSOLVED	UG/L	134000	102000	94800	46000	44900	47500
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COBALT, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	G 102 24 FEB 04 A4148802	PZ 03U 25 FEB 04 A4154001	PZ 04U 25 FEB 04 A4154002	R 001D 25 FEB 04 A4154301	UB 01D 25 FEB 04 A4154302	UB 02D 24 FEB 04 A4148402
COPPER, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
IRON, DISSOLVED	UG/L	1740	1510	2170	505	475	863
LEAD, DISSOLVED	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
MAGNESIUM, DISSOLVED	UG/L	60200	42500	42900	28900	41200	10500
MANGANESE, DISSOLVED	UG/L	84.2	99.2	126	11	10.2	20.9
MERCURY, DISSOLVED	UG/L	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
NICKEL, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
SELENIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
SILVER, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
THALLIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	US-03D 24-FEB-04 A4148403	US-04D 24-FEB-04 A4148404	US-04D DUP 24-FEB-04 A4148401	US-04S 24-FEB-04 A4148803	US-04S DUP 24-FEB-04 A4148801	US-05D 26-FEB-04 A4159102
ALKALINITY AS CACO3	MG/L	386	210	210			195
BOD	MG/L	< 2	< 2	< 2			< 2
CHLORIDE, DISSOLVED	MG/L	187	3.2	3.3	198	210	1.9
CYANIDE, DISSOLVED	MG/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
FLUORIDE, TOTAL	MG/L	< 0.5	0.76	0.75	< 0.5	< 0.5	1.1
GROSS BETA	PCI/L	< 1.9	< 1.7	< 1	< 4.1	< 0.8	< 1.3
HARDNESS AS CACO3	MG/L	491	171	167	555	558	126
NITROGEN, AMMONIA	MG/L	0.18	0.67	0.67			0.24
NITROGEN, NITRATE	MG/L	< 2	< 2	< 2			< 2
NITROGEN, NITRATE, DISSOLVED	MG/L	< 2	< 2	< 2	< 2	< 2	< 2
NITROGEN, NITRITE	MG/L	< 0.05	< 0.05	< 0.05			< 0.05
NITROGEN, TOTAL KJELDAHL	MG/L	0.57	0.94	0.62			0.48
PHENOLICS, TOTAL RECOVERABLE	MG/L	< 0.005	< 0.005	< 0.005	0.0071	< 0.005	< 0.005
PHOSPHORUS, ORTHO	MG/L	0.21	0.3	0.29			0.026
RADIUM - 226, DISSOLVED	PCI/L	0.57	< 0.08	< 0.09	1	1	< 0.01
RADIUM - 228, DISSOLVED	PCI/L	0.59	< 0.05	< 0.53	0.98	1	< -0.34
SOLIDS, TOTAL DISSOLVED	MG/L	701	296	291	740	861	289
STRONTIUM, DISSOLVED	PCI/L	< 0.12	< -0.08	< 0.17	< 0.54	< 0.29	< -0.47
SULFATE	MG/L	74.8	73.1 j	50 j			73
SULFATE, DISSOLVED	MG/L	58.3	82.7 j	59 j	98.2	90.2	68.5
SULFIDE, TOTAL	MG/L	< 1	< 1	< 1			< 1
TOTAL ORGANIC CARBON AS NPOC	MG/L	2	3	2.8			1.3
TRITIUM	PCI/L	190	0 j	100 j	< 180	< 160	< 60
ANTIMONY, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ARSENIC, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
BARIUM, DISSOLVED	UG/L	< 200 N	< 200 N	< 200 N	< 200 j	< 200 j	< 200
BERYLLIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
BORON, DISSOLVED	UG/L	143	429	417	233	225	516
CADMIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
CALCIUM, DISSOLVED	UG/L	109000	33800	32900	130000	131000	21500
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COBALT, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10

9

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	UB 03D 24 FEB 04 A4148401	UB 04D 24 FEB 04 A4148404	UB 04D DUP 24 FEB 04 A4148401	UB 04S 24 FEB 04 A4148803	UB 04S DUP 24 FEB 04 A4148801	UB 05D 26 FEB 04 A4159102
COPPER, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
IRON, DISSOLVED	UG/L	3100	< 100	< 100	3330	3330	< 100
LEAD, DISSOLVED	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
MAGNESIUM, DISSOLVED	UG/L	51100	21100	20600	55900	56000	17500
MANGANESE, DISSOLVED	UG/L	38 8	7 1	7	91 9	91 9	8 7
MERCURY, DISSOLVED	UG/L	< 0 2	< 0 2	< 0 2	< 0 2	< 0 2	< 0 2
NICKEL, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
SELENIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
SILVER, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
THALLIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	US-06D 26-FEB-04 A4159103	US-06S 26-FEB-04 A4159001	VW-03 26-FEB-04 A4159201	W-03D 25-FEB-04 A4154303	W-06S 26-FEB-04 A4159002	W-08D 25-FEB-04 A4154304
ALKALINITY AS CACO3	MG/L	195		270	402		385
BOD	MG/L	< 2		< 2	< 2		< 2
CHLORIDE, DISSOLVED	MG/L	4	62.8	16.1	132	116	77.2
CYANIDE, DISSOLVED	MG/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
FLUORIDE, TOTAL	MG/L	1.1	< 0.5	0.97	< 0.5	< 0.5	< 0.5
GROSS BETA	PCI/L	2.7	< 1.3	3.7	< -0.02	17.6	< 3.7
HARDNESS AS CACO3	MG/L	174	452	242	539	1440	432
NITROGEN, AMMONIA	MG/L	1.1		0.51	0.054		0.32
NITROGEN, NITRATE	MG/L	< 2		< 2	< 2		< 2
NITROGEN, NITRATE, DISSOLVED	MG/L	< 2	< 2	< 2	< 2	< 2	< 2
NITROGEN, NITRITE	MG/L	< 0.05		< 0.05	< 0.05		< 0.05
NITROGEN, TOTAL KJELDAHL	MG/L	0.95		0.42	< 0.1		0.82
PHENOLICS, TOTAL RECOVERABLE	MG/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
PHOSPHORUS, ORTHO	MG/L	0.22		< 0.02	0.076		0.037
RADIUM - 226, DISSOLVED	PCI/L	< 0.12	0.36	0.22	0.27	0.37	0.25
RADIUM - 228, DISSOLVED	PCI/L	< 0.29	< -0.18	< 0.4	< 0.49	1.3	< 0.05
SOLIDS, TOTAL DISSOLVED	MG/L	350	518	351	716	1840	535
STRONTIUM, DISSOLVED	PCI/L	< -0.1	< 0.44	< 0.19	< 0.27	1.32	< 0.25
SULFATE	MG/L	109		39.7	96.8		38.6
SULFATE, DISSOLVED	MG/L	103	29.8	45.7	100	851	39.7
SULFIDE, TOTAL	MG/L	< 1		< 1	< 1		< 1
TOTAL ORGANIC CARBON AS NPOC	MG/L	1.8		1.5	1.7		5.2
TRITIUM	PCI/L	< 60	< 220	< -140	< 80	< 50	< -8
ANTIMONY, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ARSENIC, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
BARIUM, DISSOLVED	UG/L	< 200	< 200	< 200	< 200 N	< 200	< 200 N
BERYLLIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
BORON, DISSOLVED	UG/L	534	< 100	379	< 100	< 100	103
CADMIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
CALCIUM, DISSOLVED	UG/L	35900	105000	44200	107000	379000	100000
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COBALT, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	UB 06D 26 FEB 04 A4159103	UB 06S 26 FEB 04 A4159001	VW 01 26 FEB 04 A4159201	W 01D 25 FEB 04 A4154303	W 06S 26 FEB 04 A4159002	W 08D 25 FEB 04 A4154304
COPPER, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
IRON, DISSOLVED	UG/L	621	1460	761	2180	7940	3840
LEAD, DISSOLVED	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
MAGNESIUM, DISSOLVED	UG/L	20400	46100	12100	66000	121000	44400
MANGANESE, DISSOLVED	UG/L	22.4	80.1	9.1	121	541	184
MERCURY, DISSOLVED	UG/L	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
NICKEL, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
SELENIUM, DISSOLVED	UG/L	< 5	< 5	< 5	< 5	< 5	< 5
SILVER, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
THALLIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

12

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	G-102 24-FEB-04 A4148802	PZ-03U 25-FEB-04 A4154001	PZ-04U 25-FEB-04 A4154002	R-001D 25-FEB-04 A4154301	US-01D 25-FEB-04 A4154302	US-02D 24-FEB-04 A4148402
2,4,5-TP (SILVEX)	UG/L	< 2	< 2	< 2	< 2	< 2	< 2
2,4-D	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ALACHLOR	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
ALDICARB	UG/L	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
ALPHA-CHLORDANE	UG/L	< 0.048	< 0.048	< 0.05	< 0.049	< 0.048	< 0.05
AROCLOR-1016	UG/L	< 0.96	< 0.96	< 0.99	< 0.98	< 0.96	< 1
AROCLOR-1221	UG/L	< 1.9	< 1.9	< 2	< 2	< 1.9	< 2
AROCLOR-1232	UG/L	< 0.96	< 0.96	< 0.99	< 0.98	< 0.96	< 1
AROCLOR-1242	UG/L	< 0.96	< 0.96	< 0.99	< 0.98	< 0.96	< 1
AROCLOR-1248	UG/L	< 0.96	< 0.96	< 0.99	< 0.98	< 0.96	< 1
AROCLOR-1254	UG/L	< 0.96	< 0.96	< 0.99	< 0.98	< 0.96	< 1
AROCLOR-1260	UG/L	< 0.96	< 0.96	< 0.99	< 0.98	< 0.96	< 1
ATRAZINE	UG/L	< 3	< 3	< 3	< 3	< 4	< 3
CARBOFURAN	UG/L	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
DALAPON	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
ENDOTHALL	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ENDRIN	UG/L	< 0.048	< 0.048	< 0.05	< 0.049	< 0.048	< 0.05
GAMMA-BHC (LINDANE)	UG/L	< 0.048	< 0.048	< 0.05	< 0.049	< 0.048	< 0.05
GAMMA-CHLORDANE	UG/L	< 0.048	< 0.048	< 0.05	< 0.049	< 0.048	< 0.05
HEPTACHLOR	UG/L	< 0.048	< 0.048	< 0.05	< 0.049	< 0.048	< 0.05
HEPTACHLOR EPOXIDE	UG/L	< 0.048	< 0.048	< 0.05	< 0.049	< 0.048	< 0.05
METHOXYCHLOR	UG/L	< 0.048	< 0.048	< 0.05	< 0.049	< 0.048	< 0.05
PICLORAM	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
SIMAZINE	UG/L	< 4	< 4	< 4	< 4	< 5	< 4
TOXAPHENE	UG/L	< 0.96	< 0.96	< 0.99	< 0.98	< 0.96	< 1
1,2-DICHLOROBENZENE	UG/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.6	< 0.5
1,4-DICHLOROBENZENE	UG/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.6	< 0.5
BENZO(A)PYRENE	UG/L	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
BIS(2-ETHYLHEXYL)PHTHALATE	UG/L	< 2	< 2	< 2	< 2	11 u	< 2
DINOSEB	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
HEXACHLOROCYCLOPENTADIENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
PENTACHLOROPHENOL	UG/L	< 1	< 1	< 1	< 1	< 1	< 1

15

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	UB 03D 24 FEB 04 A4148401	UB 04D 24 FEB 04 A4148404	UB 04D DUP 24 FEB 04 A4148401	UB 04B 24 FEB 04 A4148801		UB 04B DUP 24 FEB 04 A4148801	UB 05D 26 FEB 04 A4159102	
2,4,5 TP (SILVEX)	UG/L	< 2	< 2	< 2	< 2		< 2	< 2	
2,4 D	UG/L	< 10	< 10	< 10	< 10		< 10	< 10	
ALACHLOR	UG/L	< 1	< 1	< 1	< 1		< 1	< 1	
ALDICARB	UG/L	< 0.6	< 0.6	< 0.6	< 0.6		< 0.6	< 0.6	
ALPHA CHLORDANE	UG/L	< 0.049	< 0.048	< 0.048	< 0.048		< 0.048	< 0.05	
AROCLOR 1016	UG/L	< 0.97	< 0.96	< 0.96	< 0.95		< 0.96	< 1	
AROCLOR 1221	UG/L	< 1.9	< 1.9	< 1.9	< 1.9		< 1.9	< 2	
AROCLOR 1232	UG/L	< 0.97	< 0.96	< 0.96	< 0.95		< 0.96	< 1	
AROCLOR 1242	UG/L	< 0.97	< 0.96	< 0.96	< 0.95		< 0.96	< 1	
AROCLOR 1248	UG/L	< 0.97	< 0.96	< 0.96	< 0.95		< 0.96	< 1	
AROCLOR 1254	UG/L	< 0.97	< 0.96	< 0.96	< 0.95		< 0.96	< 1	
AROCLOR 1260	UG/L	< 0.97	< 0.96	< 0.96	< 0.95		< 0.96	< 1	
ATRAZINE	UG/L	< 1	< 1	< 1	< 1		< 1	< 1	
CARBOFURAN	UG/L	< 0.7	< 0.7	< 0.7	< 0.7		< 0.7	< 0.7	
DALAPON	UG/L	< 1	< 1	< 1	< 1		< 1	< 1	
ENDOTHALL	UG/L	< 10	< 10	< 10	< 10		< 10	< 10	
ENDRIN	UG/L	< 0.049	< 0.048	< 0.048	< 0.048		< 0.048	< 0.05	
GAMMA BHC (LINDANE)	UG/L	< 0.049	< 0.048	< 0.048	< 0.048		< 0.048	< 0.05	
GAMMA CHLORDANE	UG/L	< 0.049	< 0.048	< 0.048	< 0.048		< 0.048	< 0.05	
HEPTACHLOR	UG/L	< 0.049	< 0.048	< 0.048	< 0.048		< 0.048	< 0.05	
HEPTACHLOR EPOXIDE	UG/L	< 0.049	< 0.048	< 0.048	< 0.048		< 0.048	< 0.05	
METHOXYCHLOR	UG/L	< 0.049	< 0.048	< 0.048	< 0.048		< 0.048	< 0.05	
PICLORAM	UG/L	< 1	< 1	< 1	< 1		< 1	< 1	
SIMAZINE	UG/L	< 4	< 4	< 4	< 4		< 4	< 4	
TOXAPHENE	UG/L	< 0.97	< 0.96	< 0.96	< 0.95		< 0.96	< 1	
1,2 DICHLOROBENZENE	UG/L	< 0.5	< 0.5	< 0.6	< 0.5	j	< 0.5	< 0.5	
1,4 DICHLOROBENZENE	UG/L	< 0.5	0.5	< 0.6	< 0.5	j	< 0.5	< 0.5	
BENZO(A)PYRENE	UG/L	< 0.2	< 0.2	< 0.2	< 0.2	j	< 0.2	< 0.2	
BIS(2-ETHYLHEXYL)PHTHALATE	UG/L	< 2	< 2	< 2	< 2		< 2	8	Bu
DINOSEB	UG/L	< 1	< 1	< 1	< 1		< 1	< 1	
HEXACHLOROCYCLOPENTADIENE	UG/L	< 1	< 1	< 1	< 1		< 1	< 1	
PENTACHLOROPHENOL	UG/L	< 1	< 1	< 1	< 1		< 1	< 1	

4

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	US-06D 26-FEB-04 A4159103	US-06S 26-FEB-04 A4159001	VW-03 26-FEB-04 A4159201	W-03D 25-FEB-04 A4154303	W-06S 26-FEB-04 A4159002	W-08D 25-FEB-04 A4154304
2,4,5-TP (SILVEX)	UG/L	< 2	< 2	< 2	< 2	< 2	< 2
2,4-D	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ALACHLOR	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
ALDICARB	UG/L	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
ALPHA-CHLORDANE	UG/L	< 0.049	< 0.05	< 0.048	< 0.048	< 0.05	< 0.049
AROCLOR-1016	UG/L	< 0.98	< 1	< 0.96	< 0.96	< 0.99	< 0.97
AROCLOR-1221	UG/L	< 2	< 2	< 1.9	< 1.9	< 2	< 1.9
AROCLOR-1232	UG/L	< 0.98	< 1	< 0.96	< 0.96	< 0.99	< 0.97
AROCLOR-1242	UG/L	< 0.98	< 1	< 0.96	< 0.96	< 0.99	< 0.97
AROCLOR-1248	UG/L	< 0.98	< 1	< 0.96	< 0.96	< 0.99	< 0.97
AROCLOR-1254	UG/L	< 0.98	< 1	< 0.96	< 0.96	< 0.99	< 0.97
AROCLOR-1260	UG/L	< 0.98	< 1	< 0.96	< 0.96	< 0.99	< 0.97
ATRAZINE	UG/L	< 3	< 3	< 3	< 3	< 3	< 3
CARBOFURAN	UG/L	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
DALAPON	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
ENDOTHALL	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
ENDRIN	UG/L	< 0.049	< 0.05	< 0.048	< 0.048	< 0.05	< 0.049
GAMMA-BHC (LINDANE)	UG/L	< 0.049	< 0.05	< 0.048	< 0.048	< 0.05	< 0.049
GAMMA-CHLORDANE	UG/L	< 0.049	< 0.05	< 0.048	< 0.048	< 0.05	< 0.049
HEPTACHLOR	UG/L	< 0.049	< 0.05	< 0.048	< 0.048	< 0.05	< 0.049
HEPTACHLOR EPOXIDE	UG/L	< 0.049	< 0.05	< 0.048	< 0.048	< 0.05	< 0.049
METHOXYCHLOR	UG/L	< 0.049	< 0.05	< 0.048	< 0.048	< 0.05	< 0.049
PICLORAM	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
SIMAZINE	UG/L	< 4	< 4	< 4	< 4	< 4	< 4
TOXAPHENE	UG/L	< 0.98	< 1	< 0.96	< 0.96	< 0.99	< 0.97
1,2-DICHLOROBENZENE	UG/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-DICHLOROBENZENE	UG/L	< 0.5	< 0.5	0.5	< 0.5	< 0.5	< 0.5
BENZO(A)PYRENE	UG/L	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
BIS(2-ETHYLHEXYL)PHTHALATE	UG/L	< 2	< 2	< 2	< 2	< 2	< 2
DINOSEB	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
HEXACHLOROCYCLOPENTADIENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
PENTACHLOROPHENOL	UG/L	< 1	< 1	< 1	< 1	< 1	< 1

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	G-102 24-FEB-04 A4148802	PZ-03U 25-FEB-04 A4154001	PZ-04U 25-FEB-04 A4154002	R-001D 25-FEB-04 A4154301	US-01D 25-FEB-04 A4154302	US-02D 24-FEB-04 A4148402
1,1,1-TRICHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-TRICHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
1,1-DICHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-TRICHLOROBENZENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	< 2	< 2	< 2	< 2	< 2	< 2
1,2-DIBROMOETHANE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
1,2-DICHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
1,2-DICHLOROPROPANE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
BENZENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
CARBON TETRACHLORIDE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
CHLOROBENZENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
CHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
CIS-1,2-DICHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
ETHANE	UG/L				< 2	< 2	< 2
ETHENE	UG/L				< 2	< 2	< 2
ETHYLBENZENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
METHANE	UG/L				3.1	7.7	5.7
METHYLENE CHLORIDE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
STYRENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
TETRACHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
TOLUENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
TRANS-1,2-DICHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
TRICHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
VINYL CHLORIDE	UG/L	< 2	< 2	< 2	< 2	< 2	< 2
XYLENE, TOTAL	UG/L	< 2	< 2	< 2	< 2	< 2	< 2

17

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	UB 03D 24 FEB 04 A4148403		UB 04D 24 FEB 04 A4148404		UB 04D DUP 24 FEB 04 A4148401		UB 04S 24 FEB 04 A4148803		UB 04S DUP 24 FEB 04 A4148801		UB 05D 26 FEB 04 A4159102	
1,1,1 TRICHLOROETHANE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
1,1,2-TRICHLOROETHANE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
1,1 DICHLOROETHENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
1,2,4 TRICHLOROBENZENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
1,2 DIBROMO 3 CHLOROPROPANE	UG/L	< 20		< 2		< 2		< 4	j	< 2		< 2	
1,2 DIBROMOETHANE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
1,2 DICHLOROETHANE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
1,2 DICHLOROPROPANE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
BENZENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
CARBON TETRACHLORIDE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
CHLOROBENZENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
CHLOROETHANE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
CIS 1,2 DICHLOROETHENE	UG/L	180	D	< 1		< 1		47	j	46	D	< 1	
ETHANE	UG/L	< 8		< 2		< 2						< 2	
ETHENE	UG/L	< 8		< 2		< 2						< 2	
ETHYLBENZENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
METHANE	UG/L	14		7		9.8						7.9	
METHYLENE CHLORIDE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
STYRENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
TETRACHLOROETHENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
TOLUENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
TRANS-1,2-DICHLOROETHENE	UG/L	52		< 1		< 1		2	j	3		< 1	
TRICHLOROETHENE	UG/L	< 10		< 1		< 1		< 2	j	< 1		< 1	
VINYL CHLORIDE	UG/L	14	J	< 2		< 2		1	j	2		< 2	
XYLENE, TOTAL	UG/L	< 20		< 2		< 2		< 4	j	< 2		< 2	

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	US-06D 26-FEB-04 A4159103	US-06S 26-FEB-04 A4159001	VW-03 26-FEB-04 A4159201	W-03D 25-FEB-04 A4154303	W-06S 26-FEB-04 A4159002	W-08D 25-FEB-04 A4154304
1,1,1-TRICHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
1,1,2-TRICHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
1,1-DICHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
1,2,4-TRICHLOROBENZENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	< 2	< 2	< 2	< 2	< 8	< 2
1,2-DIBROMOETHANE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
1,2-DICHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
1,2-DICHLOROPROPANE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
BENZENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
CARBON TETRACHLORIDE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
CHLOROBENZENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
CHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
CIS-1,2-DICHLOROETHENE	UG/L	< 1	< 1	0.3 J	< 1	4	< 1
ETHANE	UG/L	< 2		< 10	< 8		< 40
ETHENE	UG/L	< 2		< 10	< 8		< 40
ETHYLBENZENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
METHANE	UG/L	12		46	30		380
METHYLENE CHLORIDE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
STYRENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
TETRACHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
TOLUENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
TRANS-1,2-DICHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
TRICHLOROETHENE	UG/L	< 1	< 1	< 1	< 1	< 4	< 1
VINYL CHLORIDE	UG/L	< 2	< 2	< 2	< 2	< 8	< 2
XYLENE, TOTAL	UG/L	< 2	< 2	< 2	< 2	< 8	< 2

6

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	AB FIELD BLANK 26-FEB-04 A4159101
ALACHLOR	UG/L	< 1
ATRAZINE	UG/L	< 3
ENDOTHALL	UG/L	< 10
SIMAZINE	UG/L	< 4
1,2-DICHLOROBENZENE	UG/L	< 0.5
1,4-DICHLOROBENZENE	UG/L	< 0.5
BENZO(A)PYRENE	UG/L	< 0.2
BIS(2-ETHYLHEXYL)PHTHALATE	UG/L	< 2
HEXACHLOROCYCLOPENTADIENE	UG/L	< 1
PENTACHLOROPHENOL	UG/L	< 1

12

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	AB FIELD BLANK 26 FEB 04 A4159101	TRIP BLANK 23 FEB 04 A4146002	TRIP BLANK 24 FEB 04 A4148405	TRIP BLANK 24 FEB 04 A4148804	TRIP BLANK 25 FEB 04 A4154305	TRIP BLANK 26 FEB 04 A4159202
1,1,1 TRICHLOROETHANE	UG/L	< 1		< 1	< 1	< 1	< 1
1,1,2 TRICHLOROETHANE	UG/L	< 1		< 1	< 1	< 1	< 1
1,1 DICHLOROETHENE	UG/L	< 1	< 5	< 1	< 1	< 1	< 1
1,2,4 TRICHLOROBENZENE	UG/L	< 1		< 1	< 1	< 1	< 1
1,2 DIBROMO 3 CHLOROPROPANE	UG/L	< 2		< 2	< 2	< 2	< 2
1,2 DIBROMOETHANE	UG/L	< 1		< 1	< 1	< 1	< 1
1,2 DICHLOROETHANE	UG/L	< 1		< 1	< 1	< 1	< 1
1,2 DICHLOROPROPANE	UG/L	< 1		< 1	< 1	< 1	< 1
BENZENE	UG/L	< 1		< 1	< 1	< 1	< 1
CARBON TETRACHLORIDE	UG/L	< 1		< 1	< 1	< 1	< 1
CHLOROBENZENE	UG/L	< 1		< 1	< 1	< 1	< 1
CHLOROETHANE	UG/L	< 1	< 1	< 1	< 1	< 1	< 1
CIS 1,2 DICHLOROETHENE	UG/L	< 1	< 5	< 1	< 1	< 1	< 1
ETHYLBENZENE	UG/L	< 1		< 1	< 1	< 1	< 1
METHYLENE CHLORIDE	UG/L	< 1		< 1	< 1	< 1	< 1
STYRENE	UG/L	< 1		< 1	< 1	< 1	< 1
TETRACHLOROETHENE	UG/L	< 1	< 5	< 1	< 1	< 1	< 1
TOLUENE	UG/L	< 1		< 1	< 1	< 1	< 1
TRANS 1,2 DICHLOROETHENE	UG/L	< 1	< 5	< 1	< 1	< 1	< 1
TRICHLOROETHENE	UG/L	< 1	< 5	< 1	< 1	< 1	< 1
VINYL CHLORIDE	UG/L	< 2		< 2	< 2	< 2	< 2
XYLENE, TOTAL	UG/L	< 2		< 2	< 2	< 2	< 2

22

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	SW-01 23-FEB-04 A4145802	SW-01 DUP 23-FEB-04 A4145801	SW-02 26-FEB-04 A4158901
COLOR, FIELD		NONE		NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM	910		906
DEPTH TO WATER	FEET	0.55		2.99
OXYGEN, DISSOLVED	MG/L	3.0		3.0
EH, FIELD	MV	92		57
ODOR, FIELD		NONE		NONE
PH, FIELD	SU	8.34		7.71
TEMPERATURE	DEG C	5.0		0.7
TURBIDITY, FIELD		NONE		SLIGHT

HOD LANDFILL

1ST QUARTER MONITORING RESULTS

FEBRUARY 2004

PARAMETER	UNITS	BW 01 21 FEB 04 A4145802	BW 01 DUP 21 FEB 04 A4145801	BW 02 26 FEB 04 A4158901
CHLORIDE	MG/L	136	136	145
CYANIDE, TOTAL	MG/L	< 0.01	< 0.01	< 0.01
FLUORIDE	MG/L	< 0.5	< 0.5	< 1
HARDNESS AS CACO3	MG/L	298	306	294
NITROGEN, AMMONIA	MG/L	0.025	0.022	0.048
NITROGEN, AMMONIA, UN IONIZED	MG/L	< 0.02	< 0.02	< 0.02
PHENOLICS, TOTAL RECOVERABLE	MG/L	< 0.005	0.0075	< 0.005
SOLIDS, TOTAL DISSOLVED	MG/L	470	419	508
SULFATE	MG/L	21.2)	55.6)	26.2
ARSENIC, TOTAL	UG/L	< 10	< 10	< 10
BARIUM, TOTAL	UG/L	< 200	< 200	< 200
BORON, TOTAL	UG/L	< 100	< 100	< 100
CADMIUM, TOTAL	UG/L	< 5	< 5	< 5
CALCIUM, TOTAL	UG/L	58200	59500	60700
CHROMIUM, TRIVALENT	UG/L	< 0.01	< 0.01	< 0.01
CHROMIUM, TOTAL	UG/L	< 10	< 10	< 10
CHROMIUM, TOTAL HEXAVALENT	UG/L	< 10	< 10	13
COPPER, TOTAL	UG/L	< 10	< 10	< 10
IRON, DISSOLVED	UG/L	< 100	< 100	148
LEAD, TOTAL	UG/L	< 3	< 3	< 3
MAGNESIUM, TOTAL	UG/L	37000	38200	34700
MANGANESE, TOTAL	UG/L	216	217	165
MERCURY, TOTAL	UG/L	< 0.2	< 0.2	< 0.2
NICKEL, TOTAL	UG/L	< 10	< 10	< 10
SELENIUM, TOTAL	UG/L	< 5	< 5	< 5
SILVER, TOTAL	UG/L	< 10	< 10	< 10
ZINC, TOTAL	UG/L	< 20	< 20	< 20

HOD LANDFILL
1ST QUARTER MONITORING RESULTS
FEBRUARY 2004

PARAMETER	UNITS	SW-01 23-FEB-04 A4145802	SW-01 DUP 23-FEB-04 A4145801	SW-02 26-FEB-04 A4158901
1,2-DICHLOROETHENE, TOTAL	UG/L	< 1	< 1	1.2
CARBON DISULFIDE	UG/L	< 1	< 1	< 1
TRICHLOROETHENE	UG/L	< 1	< 1	< 1
VINYL CHLORIDE	UG/L	< 2	< 2	< 2

Appendix H
Electronic Data Deliverable